

SEQUENCE LISTING



<110> Statens Serum Institut
Anderson, Peter

<120> M. Tuberculosis Antigens

<130> 670001-2002.4

<140> 09/804,980

<141> 2001-03-12

<160> 257

<170> PatentIn version 3.0

<210> 1

<211> 381

<212> DNA

<213> Mycobacterium tuberculosis

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<211> 96

<212> PRT

<213> Mycobacterium tuberculosis

<400> 2

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Ala Val Glu Gln Ala Ala Leu Gln Ser Ala Trp Gln Gly Asp Thr Gly
35 40 45

Ile Thr Tyr Gln Ala Trp Gln Ala Gln Trp Asn Gln Ala Met Glu Asp
50 55 60

Leu Val Arg Ala Tyr His Ala Met Ser Ser Thr His Glu Ala Asn Thr

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 <213> Mycobacterium tuberculosis

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 <212> PRT
 <213> Mycobacterium tuberculosis

<400> 4
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 35 40 45
 Gly Leu Asp Val Ser Asp Arg Ile Arg Val Val Met Ser Val Pro Ala
 50 55 60
 Glu Arg Glu Asp Trp Ala Arg Thr His Arg Asp Leu Ile Ala Gly Glu
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<212> DNA
<213> Mycobacterium tuberculosis

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<213> Mycobacterium tuberculosis

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35 40 45
Glu Gly Leu Pro Pro Gly Ser Ala Leu Leu Val Val Leu Arg Gly Pro
50 55 60
Asn Ala Gly Ser Arg Pro Leu Leu Asp Gln Ala Ile Thr Ser Ala Gly
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Arg His Pro Asp Ser Asp Ile Pro Leu Asp Asp Val Thr Val Ser Arg
85 90 95

Arg His Ala Glu Phe Arg Leu Glu Asn Asn Glu Phe Asn Val Val Asp
100 105 110

Val Gly Ser Leu Asn Gly Thr Thr Val Asn Arg Glu Pro Val Asp Ser
115 120 125

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Gly Pro

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<212> DNA
<213> Mycobacterium tuberculosis

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<210> 8

<211> 165
 <212> PRT
 <213> Mycobacterium tuberculosis

<400> 8

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Arg	Thr	Phe	Asp	Glu	Arg	Ala	Ala	Ala	Ser	Gly	Ser	Thr	Val	Leu	Cys
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Gly	Thr	Glu	Asn	Val	Met	Pro	Ala	Ser	Ala	Phe	Arg	Asp	Ser	Phe	Gly
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Glu	Asp	Tyr	Gly	Val	Thr	Ile	Ala	Asp	Gly	Pro	Met	Ala	Gly	Leu	Leu
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Ala	Arg	Ala	Ile	Val	Val	Ile	Gly	Ala	Asp	Gly	Asn	Val	Ala	Tyr	Thr
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 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 9

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<210> 10
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 <212> PRT
 <213> Mycobacterium tuberculosis
 <400> 10

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			20					25						30	
Asp	Pro	Cys	Ser	Asp	Ile	Ala	Val	Val	Phe	Ala	Arg	Gly	Thr	His	Gln
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Ala	Ser	Gly	Leu	Gly	Asp	Val	Gly	Glu	Ala	Phe	Val	Asp	Ser	Leu	Thr
		50				55					60				
Ser	Gln	Val	Gly	Gly	Arg	Ser	Ile	Gly	Val	Tyr	Ala	Val	Asn	Tyr	Pro
65					70				75					80	
Ala	Ser	Asp	Asp	Tyr	Arg	Ala	Ser	Ala	Ser	Asn	Gly	Ser	Asp	Asp	Ala
				85					90					95	
Ser	Ala	His	Ile	Gln	Arg	Thr	Val	Ala	Ser	Cys	Pro	Asn	Thr	Arg	Ile
			100					105					110		
Val	Leu	Gly	Gly	Tyr	Ser	Gln	Gly	Ala	Thr	Val	Ile	Asp	Leu	Ser	Thr
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Ser Leu Pro Thr Ile Gly Pro Leu Tyr Ser Ser Lys Thr Ile Asn Leu				
	165		170	175
Cys Ala Pro Asp Asp Pro Ile Cys Thr Gly Gly Gly Asn Ile Met Ala				
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	210		215	

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 <212> DNA
 <213> Mycobacterium tuberculosis

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<211> 182
 <212> PRT
 <213> Mycobacterium tuberculosis

<400> 12

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			20					25					30		
Asn	His	Ala	Pro	Lys	Thr	Val	Ala	Asn	Phe	Val	Gly	Leu	Ala	Gln	Gly
		35					40					45			
Thr	Lys	Asp	Tyr	Ser	Thr	Gln	Asn	Ala	Ser	Gly	Gly	Pro	Ser	Gly	Pro
	50					55					60				
Phe	Tyr	Asp	Gly	Ala	Val	Phe	His	Arg	Val	Ile	Gln	Gly	Phe	Met	Ile
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Gln	Gly	Gly	Asp	Pro	Thr	Gly	Thr	Gly	Arg	Gly	Gly	Pro	Gly	Tyr	Lys
			85					90						95	
Phe	Ala	Asp	Glu	Phe	His	Pro	Glu	Leu	Gln	Phe	Asp	Lys	Pro	Tyr	Leu
		100						105					110		
Leu	Ala	Met	Ala	Asn	Ala	Gly	Pro	Gly	Thr	Asn	Gly	Ser	Gln	Phe	Phe
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Ile	Thr	Val	Gly	Lys	Thr	Pro	His	Leu	Asn	Arg	Arg	His	Thr	Ile	Phe
	130					135					140				
Gly	Glu	Val	Ile	Asp	Ala	Glu	Ser	Gln	Arg	Val	Val	Glu	Ala	Ile	Ser
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Lys	Thr	Ala	Thr	Asp	Gly	Asn	Asp	Arg	Pro	Thr	Asp	Pro	Val	Val	Ile
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Glu	Ser	Ile	Thr	Ile	Ser										
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<210> 13
 <211> 1060
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 13

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<210> 14
<211> 219
<212> PRT
<213> Mycobacterium tuberculosis

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<400> 14

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          35          40          45

Pro Gly Ile Gly Thr Val Gly Asn Ala Phe Val Ser Ala Leu Arg Ser
          50          55          60

Lys Val Asn Lys Asn Val Gly Val Tyr Ala Val Lys Tyr Pro Ala Asp
65          70          75          80

Asn Gln Ile Asp Val Gly Ala Asn Asp Met Ser Ala His Ile Gln Ser
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Met Ala Asn Ser Cys Pro Asn Thr Arg Leu Val Pro Gly Gly Tyr Ser
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Leu Gly Ala Ala Val Thr Asp Val Val Leu Ala Val Pro Thr Gln Met

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Asn Phe Ser Pro Ala Tyr Asn Asp Arg Thr Ile Glu Leu Cys His Gly		
165	170	175
Asp Asp Pro Val Cys His Pro Ala Asp Pro Asn Thr Trp Glu Ala Asn		
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Trp Pro Gln His Leu Ala Gly Ala Tyr Val Ser Ser Gly Met Val Asn		
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Gln Ala Ala Asp Phe Val Ala Gly Lys Leu Gln		
210	215	

<210> 15
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 <212> DNA
 <213> Mycobacterium tuberculosis

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<212> PRT
<213> Mycobacterium tuberculosis
<400> 16

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			50				55					60			
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65					70					75					80
Pro	Phe	Thr	Leu	Ser	Arg	Asn	Glu	Ile	Asp	Asp	Val	Glu	Arg	Gly	Ser
				85					90					95	
Lys	Asp	Ser	Asp	Trp	Glu	Pro	Val	Lys	Glu	Ala	Ala	Lys	Lys	Leu	Ala
			100					105					110		
Phe	Val	Glu	Asp	Arg	Thr	Ile	Phe	Glu	Gly	Tyr	Ser	Ala	Ala	Ser	Ile
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Glu	Gly	Ile	Arg	Ser	Ala	Ser	Ser	Asn	Pro	Ala	Leu	Thr	Leu	Pro	Glu
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Asp	Pro	Arg	Glu	Ile	Pro	Asp	Val	Ile	Ser	Gln	Ala	Leu	Ser	Glu	Leu
145					150					155					160
Arg	Leu	Ala	Gly	Val	Asp	Gly	Pro	Tyr	Ser	Val	Leu	Leu	Ser	Ala	Asp
				165					170					175	
Val	Tyr	Thr	Lys	Val	Ser	Glu	Thr	Ser	Asp	His	Gly	Tyr	Pro	Ile	Arg
			180						185					190	
Glu	His	Leu	Asn	Arg	Leu	Val	Asp	Gly	Asp	Ile	Ile	Trp	Ala	Pro	Ala
			195				200					205			
Ile	Asp	Gly	Ala	Phe	Val	Leu	Thr	Thr	Arg	Gly	Gly	Asp	Phe	Asp	Leu

210 215 220
 Gln Leu Gly Thr Asp Val Ala Ile Gly Tyr Ala Ser His Asp Thr Asp
 225 230 235 240
 Thr Glu Arg Leu Tyr Leu Gln Glu Thr Leu Thr Phe Leu Cys Tyr Thr
 245 250 255
 Ala Glu Ala Ser Val Ala Leu Ser His
 260 265

<210> 17
 <211> 15
 <212> PRT
 <213> Mycobacterium tuberculosis

<220>
 <221> MISC_FEATURE
 <222> (13)..(13)
 <223> "Xaa" is unknown

<220>
 <221> variant
 <222> (1)..(1)
 <223> Ala is Ala or Ser

<400> 17

Ala Glu Leu Asp Ala Pro Ala Gln Ala Gly Thr Glu Xaa Ala Val
 1 5 10 15

<210> 18
 <211> 15
 <212> PRT
 <213> Mycobacterium tuberculosis

<400> 18

Ala Gln Ile Thr Leu Arg Gly Asn Ala Ile Asn Thr Val Gly Glu
 1 5 10 15

<210> 19
 <211> 15
 <212> PRT
 <213> Mycobacterium tuberculosis

<220>
 <221> MISC_FEATURE
 <222> (3)..(3)
 <223> "Xaa" is unknown

<400> 19

Asp Pro Xaa Ser Asp Ile Ala Val Val Phe Ala Arg Gly Thr His

1 5 10 15

<210> 20
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 20

Thr Asn Ser Pro Leu Ala Thr Ala Thr Ala Thr Leu His Thr Asn
1 5 10 15

<210> 21
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<220>
<221> MISC_FEATURE
<222> (2)..(2)
<223> "Xaa" is unknown

<400> 21

Ala Xaa Pro Asp Ala Glu Val Val Phe Ala Arg Gly Arg Phe Glu
1 5 10 15

<210> 22
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<220>
<221> variant
<222> (14)..(14)
<223> Asp is Asp or Gln

<220>
<221> variant
<222> (10)..(10)
<223> Val is Val or Thr

<220>
<221> variant
<222> (2)..(2)
<223> Ile is Ile or Val

<220>
<221> variant
<222> (11)..(11)
<223> Val is Phe or Val

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> "Xaa" is unknown

<400> 22

Xaa Ile Gln Lys Ser Leu Glu Leu Ile Val Val Thr Ala Asp Glu
1 5 10 15

<210> 23
<211> 19
<212> PRT
<213> Mycobacterium tuberculosis

<400> 23

Met Asn Asn Leu Tyr Arg Asp Leu Ala Pro Val Thr Glu Ala Ala Trp
1 5 10 15

Ala Glu Ile

<210> 24
<211> 34
<212> DNA
<213> Mycobacterium tuberculosis

<400> 24
cccggtcga gaacctstac cgcgacctsg csc

34

<210> 25
<211> 37
<212> DNA
<213> Mycobacterium tuberculosis

<400> 25
gggccggatc cgasgcs gcg tccttsacsg gytgcca

37

<210> 26
<211> 28
<212> DNA
<213> Mycobacterium tuberculosis

<400> 26
ggaagcccca tatgaacaat ctctaccg

28

<210> 27
<211> 32
<212> DNA
<213> Mycobacterium tuberculosis

<400> 27

cgcgctcagc ccttagtgac tgagcgcgac cg	32
<210> 28	
<211> 24	
<212> DNA	
<213> Mycobacterium tuberculosis	
<400> 28	
ctcgaattcg ccgggtgcac acag	24
<210> 29	
<211> 25	
<212> DNA	
<213> Mycobacterium tuberculosis	
<400> 29	
ctcgaattcg ccccatatcg agaac	25
<210> 30	
<211> 15	
<212> DNA	
<213> Mycobacterium tuberculosis	
<400> 30	
gtgtatctgc tggac	15
<210> 31	
<211> 15	
<212> DNA	
<213> Mycobacterium tuberculosis	
<400> 31	
ccgactggct ggccg	15
<210> 32	
<211> 24	
<212> DNA	
<213> Mycobacterium tuberculosis	
<400> 32	
gaggaattcg cttagcggat cgca	24
<210> 33	
<211> 15	
<212> DNA	
<213> Mycobacterium tuberculosis	
<400> 33	
cccacattcc gttgg	15

<210>	34	
<211>	15	
<212>	DNA	
<213>	Mycobacterium tuberculosis	
<400>	34	
	gtccagcaga tacac	15
<210>	35	
<211>	27	
<212>	DNA	
<213>	Mycobacterium tuberculosis	
<400>	35	
	gtacgagaat tcatgtcgca aatcatg	27
<210>	36	
<211>	27	
<212>	DNA	
<213>	Mycobacterium tuberculosis	
<400>	36	
	gtacgagaat tcgagcttgg ggtgccg	27
<210>	37	
<211>	28	
<212>	DNA	
<213>	Mycobacterium tuberculosis	
<400>	37	
	cgattccaag cttgtggccg ccgacccg	28
<210>	38	
<211>	30	
<212>	DNA	
<213>	Mycobacterium tuberculosis	
<400>	38	
	cgttagggat cctcatcgcc atggtgttgg	30
<210>	39	
<211>	26	
<212>	DNA	
<213>	Mycobacterium tuberculosis	
<400>	39	
	cgttagggat ccggttccac tgtgcc	26
<210>	40	
<211>	28	
<212>	DNA	

<213> Mycobacterium tuberculosis

<400> 40

cgttagggat cctcaggtct tttcgatg

28

<210> 41

<211> 952

<212> DNA

<213> Mycobacterium tuberculosis

<400> 41

gaattcgccg ggtgcacaca gccttacacg acggaggtgg acacatgaag ggtcggtcgg 60

cgctgctgcg ggcgctctgg attgccgcac tgtcattcgg gttgggcggt gtcgcggtag 120

ccgcggaacc caccgccaag gccgccccat acgagaacct gatggtgccg tcgccctcga 180

tgggcccggga catcccggtg gccttcctag ccggtggggc gcacgcggtg tatctgctgg 240

acgccttcaa cgccggcccc gatgtcagta actgggtcac cgcgggtaac gcgatgaaca 300

cgttggcggg caaggggatt tcggtggtgg caccggccgg tggcgctac agcatgtaca 360

ccaactggga gcaggatggc agcaagcagt gggacacctt cttgtccgct gagctgcccg 420

actggctggc cgctaaccgg ggcttggccc ccggtggcca tgcggccggtt ggcgccgctc 480

agggcggtta cggggcgatg gcgctggcgg ccttcacccc cgaccgcttc ggcttcgctg 540

gctcgatgtc gggctttttg taccgcgcga acaccaccac caacggtgcg atcgcggcgg 600

gcatgcagca attcggcggg gtggacacca acggaatgtg gggagcacca cagctgggtc 660

gggtggaagtg gcacgacccg tgggtgcatg ccagcctgct ggcgcaaaac aacacccggg 720

tgtgggtgtg gagcccgacc aaccggggag ccagcgatcc cgccgccatg atcggccaaa 780

ccgccgaggg gatgggtaac agccgcatgt tctacaacca gtatcgcagc gtcggcgggc 840

acaacggaca cttcgacttc ccagccagcg gtgacaacgg ctggggctcg tgggcgcccc 900

agctgggcgc tatgtcgggc gatatcgctg gtgcgatccg ctaagcgaat tc 952

<210> 42

<211> 298

<212> PRT

<213> Mycobacterium tuberculosis

<400> 42

Met Lys Gly Arg Ser Ala Leu Leu Arg Ala Leu Trp Ile Ala Ala Leu
1 5 10 15

Ser Phe Gly Leu Gly Gly Val Ala Val Ala Ala Glu Pro Thr Ala Lys
20 25 30

<400> 43
gcaacacccg ggatgtcgca aatcatg 27

<210> 44
<211> 27
<212> DNA
<213> Mycobacterium tuberculosis

<400> 44
gtaacacccg gggtaggcgc cgacccg 27

<210> 45
<211> 37
<212> DNA
<213> Mycobacterium tuberculosis

<400> 45
ctactaagct tggatcccta gccgccccat ttggcgg 37

<210> 46
<211> 38
<212> DNA
<213> Mycobacterium tuberculosis

<400> 46
ctactaagct tccatgggtca ggtcttttcg atgcttac 38

<210> 47
<211> 450
<212> DNA
<213> Mycobacterium tuberculosis

<400> 47
gtgccgcgct ccccaggggt cttatgggtc gatatacctg agtttgatgg aagtccgatg 60
accagcagtc agcatacggc atggccgaaa agagtggggg gatgatggcc gaggatgttc 120
gcgccgagat cgtggccagc gttctcgaag tcgttgtcaa cgaaggcgat cagatcgaca 180
agggcgacgt cgtgggtgctg ctggagtcga tgaagatgga gatccccgtc ctggccgaag 240
ctgccggaac ggtcagcaag gtggcggtat cggtagggcg tgcattcag gccggcgacc 300
ttatcgcggt gatcagctag tcgttgatag tcaactcatgt ccacactcgg tgatctgctc 360
gccgaacaca cgggtgctgcc gggcagcgcg gtggaccacc tgcatgcggt ggtcggggag 420
tggcagctcc ttgccgactt gtcgtttgcc 450

<210> 48
<211> 71
<212> PRT

<213> Mycobacterium tuberculosis

<400> 48

Met Ala Glu Asp Val Arg Ala Glu Ile Val Ala Ser Val Leu Glu Val
1 5 10 15

Val Val Asn Glu Gly Asp Gln Ile Asp Lys Gly Asp Val Val Val Leu
20 25 30

Leu Glu Ser Met Lys Met Glu Ile Pro Val Leu Ala Glu Ala Ala Gly
35 40 45

Thr Val Ser Lys Val Ala Val Ser Val Gly Asp Val Ile Gln Ala Gly
50 55 60

Asp Leu Ile Ala Val Ile Ser
65 70

<210> 49

<211> 749

<212> DNA

<213> Mycobacterium tuberculosis

<400> 49

gggtacccat cgatgggttg cggttcggca ccgaggtgct aacgcacttg ctgacacact 60
gctagtcgaa aacgaggcta gtcgcaacgt cgatcacacg agaggactga ccatgacaac 120
ttcacccgac ccgtatgccg cgctgcccaa gctgccgtcc ttcagcctga cgtcaacctc 180
gatcacccgat gggcagccgc tggctacacc ccaggtcagc gggatcatgg gtgcggggcg 240
ggcggatgcc agtccgcagc tgaggtggtc gggatttccc agcgagaccc gcagcttcgc 300
ggtaaccgtc tacgaccctg atgccccac cctgtccggg ttctggcact gggcgggtggc 360
caacctgcct gccaacgtca ccgagttgcc cgaggggtgc ggcgatggcc gcgaactgcc 420
gggcggggca ctgacattgg tcaacgacgc cggatatgcg cggtatgtgg gtgcggcgcc 480
gcctcccggg catggggtgc atcgctacta cgtcgcggta cacgcggtga aggtcgaaaa 540
gctcgacctc cccgaggacg cgagtcctgc atatctggga ttcaacctgt tccagcacgc 600
gattgcacga gcggtcatct tcggcaccta cgagcagcgt tagcgcttta gctgggttgc 660
cgacgtcttg ccgagccgac cgcttcgtgc agcgagccga acccgccgtc atgcagcctg 720
gggcaatgcc ttcattgatg tccttggcc 749

<210> 50

<211> 176

<212> PRT

<213> Mycobacterium tuberculosis

<400> 50

Met Thr Thr Ser Pro Asp Pro Tyr Ala Ala Leu Pro Lys Leu Pro Ser
1 5 10 15
Phe Ser Leu Thr Ser Thr Ser Ile Thr Asp Gly Gln Pro Leu Ala Thr
20 25 30
Pro Gln Val Ser Gly Ile Met Gly Ala Gly Gly Ala Asp Ala Ser Pro
35 40 45
Gln Leu Arg Trp Ser Gly Phe Pro Ser Glu Thr Arg Ser Phe Ala Val
50 55 60
Thr Val Tyr Asp Pro Asp Ala Pro Thr Leu Ser Gly Phe Trp His Trp
65 70 75 80
Ala Val Ala Asn Leu Pro Ala Asn Val Thr Glu Leu Pro Glu Gly Val
85 90 95
Gly Asp Gly Arg Glu Leu Pro Gly Gly Ala Leu Thr Leu Val Asn Asp
100 105 110
Ala Gly Met Arg Arg Tyr Val Gly Ala Ala Pro Pro Pro Gly His Gly
115 120 125
Val His Arg Tyr Tyr Val Ala Val His Ala Val Lys Val Glu Lys Leu
130 135 140
Asp Leu Pro Glu Asp Ala Ser Pro Ala Tyr Leu Gly Phe Asn Leu Phe
145 150 155 160
Gln His Ala Ile Ala Arg Ala Val Ile Phe Gly Thr Tyr Glu Gln Arg
165 170 175

<210> 51

<211> 800

<212> DNA

<213> Mycobacterium tuberculosis

<400> 51

tcatgagggt catcggggtg atcccacgcc cgcagccgca ttcgggccgc tggcgagccg 60
gtgccgcacg ccgcctcacc agcctggtgg ccgccgcctt tgcggcggcc aactgtttgc 120
ttacccccgc gctggcacca ccggcatcgg cgggctgccc ggatgccgag gtggtgttcg 180
cccgcggaac cggcgaacca cctggcctcg gtcgggtagg ccaagctttc gtcagttcat 240
tgcgccagca gaccaacaag agcatcggga catacggagt caactaccg gccaacggtg 300
atttcttggc cgccgctgac ggcgcgaacg acgccagcga ccacattcag cagatggcca 360
gcgcgtgccg ggccacgagg ttggtgctcg gcggctactc ccagggtgcg gccgtgatcg 420
acatcgtcac cgccgcacca ctgcccggcc tcgggttcac gcagccgttg ccgccgcag 480

cggacgatca catcgccgcg atcgccctgt tcgggaatcc ctcgggccgc gctggcgggc 540
 tgatgagcgc cctgaccctt caattcgggt ccaagaccat caacctctgc aacaacggcg 600
 acccgatttg ttcggacggc aaccggtggc gagcgcacct aggctacgtg cccgggatga 660
 ccaaccaggc ggcgcgtttc gtcgcgagca ggatctaacg cgagccgccc catagattcc 720
 ggctaagcaa cggctgcgcc gccgccggc cagcagtgac cgccgccgac tggcacaccg 780
 cttaccacgg ccttatgctg 800

<210> 52
 <211> 226
 <212> PRT
 <213> Mycobacterium tuberculosis
 <400> 52

Met Ile Pro Arg Pro Gln Pro His Ser Gly Arg Trp Arg Ala Gly Ala
 1 5 10 15
 Ala Arg Arg Leu Thr Ser Leu Val Ala Ala Ala Phe Ala Ala Ala Thr
 20 25 30
 Leu Leu Leu Thr Pro Ala Leu Ala Pro Pro Ala Ser Ala Gly Cys Pro
 35 40 45
 Asp Ala Glu Val Val Phe Ala Arg Gly Thr Gly Glu Pro Pro Gly Leu
 50 55 60
 Gly Arg Val Gly Gln Ala Phe Val Ser Ser Leu Arg Gln Gln Thr Asn
 65 70 75 80
 Lys Ser Ile Gly Thr Tyr Gly Val Asn Tyr Pro Ala Asn Gly Asp Phe
 85 90 95
 Leu Ala Ala Ala Asp Gly Ala Asn Asp Ala Ser Asp His Ile Gln Gln
 100 105 110
 Met Ala Ser Ala Cys Arg Ala Thr Arg Leu Val Leu Gly Gly Tyr Ser
 115 120 125
 Gln Gly Ala Ala Val Ile Asp Ile Val Thr Ala Ala Pro Leu Pro Gly
 130 135 140
 Leu Gly Phe Thr Gln Pro Leu Pro Pro Ala Ala Asp Asp His Ile Ala
 145 150 155 160
 Ala Ile Ala Leu Phe Gly Asn Pro Ser Gly Arg Ala Gly Gly Leu Met
 165 170 175
 Ser Ala Leu Thr Pro Gln Phe Gly Ser Lys Thr Ile Asn Leu Cys Asn
 180 185 190
 Asn Gly Asp Pro Ile Cys Ser Asp Gly Asn Arg Trp Arg Ala His Leu

195	200	205
Gly Tyr Val Pro Gly Met Thr Asn Gln Ala Ala Arg Phe Val Ala Ser		
210	215	220

Arg Ile
225

<210> 53
 <211> 700
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 53
 ctaggaaagc ctttcctgag taagtattgc cttcgttgca taccgccctt tacctgcgtt 60
 aatctgcatt ttatgacaga atacgaaggg cctaagacaa aattccacgc gttaatgcag 120
 gaacagattc ataacgaatt cacagcggca caacaatatg tcgcgatcgc ggtttatttc 180
 gacagcgaag acctgccgca gttggcgaag cttttttaca gccaaagcggc cgaggaacga 240
 aaccatgcaa tgatgctcgt gcaacacctg ctcgaccgcg accttcgtgt cgaaattccc 300
 ggcgtagaca cgggtgcgaaa ccagttcgac agaccccgcg aggcactggc gctggcgctc 360
 gatcaggaac gcacagtcac cgaccaggtc ggtcggctga cagcgggtggc ccgcgacgag 420
 ggcgatttcc tcggcgagca gttcatgcag tggttcttgc aggaacagat cgaagaggcg 480
 gccttgatgg caaccctggg gcggggtgcc gatcggggcg gggccaacct gttcgagcta 540
 gagaacttcg tcgcacgtga agtggatgtg gcgccggccg catcaggcgc cccgcacgct 600
 gccggggggc gcctctagat ccctggcggg gatcagcgag tgggtcccgtt cgcccgcccc 660
 tcttcacgcc aggccttggt gcggccgggg tggtagtac 700

<210> 54
 <211> 181
 <212> PRT
 <213> Mycobacterium tuberculosis

<400> 54

Met Thr Glu Tyr Glu Gly Pro Lys Thr Lys Phe His Ala Leu Met Gln	
1 5 10 15	
Glu Gln Ile His Asn Glu Phe Thr Ala Ala Gln Gln Tyr Val Ala Ile	
20 25 30	
Ala Val Tyr Phe Asp Ser Glu Asp Leu Pro Gln Leu Ala Lys His Phe	
35 40 45	
Tyr Ser Gln Ala Val Glu Glu Arg Asn His Ala Met Met Leu Val Gln	
50 55 60	

His	Leu	Leu	Asp	Arg	Asp	Leu	Arg	Val	Glu	Ile	Pro	Gly	Val	Asp	Thr
65					70					75				80	
Val	Arg	Asn	Gln	Phe	Asp	Arg	Pro	Arg	Glu	Ala	Leu	Ala	Leu	Ala	Leu
			85						90				95		
Asp	Gln	Glu	Arg	Thr	Val	Thr	Asp	Gln	Val	Gly	Arg	Leu	Thr	Ala	Val
			100					105					110		
Ala	Arg	Asp	Glu	Gly	Asp	Phe	Leu	Gly	Glu	Gln	Phe	Met	Gln	Trp	Phe
		115					120					125			
Leu	Gln	Glu	Gln	Ile	Glu	Glu	Val	Ala	Leu	Met	Ala	Thr	Leu	Val	Arg
	130					135					140				
Val	Ala	Asp	Arg	Ala	Gly	Ala	Asn	Leu	Phe	Glu	Leu	Glu	Asn	Phe	Val
145					150					155					160
Ala	Arg	Glu	Val	Asp	Val	Ala	Pro	Ala	Ala	Ser	Gly	Ala	Pro	His	Ala
			165					170						175	
Ala	Gly	Gly	Arg	Leu											
			180												

<210> 55
 <211> 950
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 55	
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gacgcatggt cttcaccgtc tatccacagc taccgacatt tgctccggct ggatcgcggg	120
taaaattccg tcgtgaacaa tcgaccatc cgctgctga catccggcag ggctgggttg	180
ggtgcgggcg cattgatcac cgccgtcgtc ctgctcatcg ccttggggcg tgtttggacc	240
ccggttgctt tcgccgatgg atgcccggac gccgaagtca cgttcgcccg cggcaccggc	300
gagccgcccg gaatcgggcg cgttggccag gcgttcgtcg actcgctgcg ccagcagact	360
ggcatggaga tcggagtata cccggtgaat tacgccgcca gccgcctaca gctgcacggg	420
ggagacggcg ccaacgacgc catatcgac attaatcca tggcctcgtc atgccgaac	480
accaagctgg tcttggggcg ctattcgag ggcgcaaccg tgatcgatat cgtggccggg	540
gttccgttgg gcagcatcag ctttggcagt ccgctacctg cggcatacgc agacaacgtc	600
gcagcggtcg cggctcttcg caatccgtcc aaccgcgccg gcggatcgct gtcgagcctg	660
agcccgtat tcggttccaa ggcgattgac ctgtgcaatc ccaccgatcc gatctgccat	720
gtgggccccg gcaacgaatt cagcggacac atcgacggct acataccac ctacaccacc	780

caggcggcta gtttcgtcgt gcagaggctc cgcgccgggt cggtgccaca tctgcctgga 840
tccgtcccgc agctgcccgg gtctgtcctt cagatgcccg gcactgccgc accggctccc 900
gaatcgtgc acggtcgtg acgctttgtc agtaagccca taaaatcgcg 950

<210> 56
<211> 262
<212> PRT
<213> Mycobacterium tuberculosis

<400> 56

Met	Asn	Asn	Arg	Pro	Ile	Arg	Leu	Leu	Thr	Ser	Gly	Arg	Ala	Gly	Leu	1	5	10	15
Gly	Ala	Gly	Ala	Leu	Ile	Thr	Ala	Val	Val	Leu	Leu	Ile	Ala	Leu	Gly	20	25	30	
Ala	Val	Trp	Thr	Pro	Val	Ala	Phe	Ala	Asp	Gly	Cys	Pro	Asp	Ala	Glu	35	40	45	
Val	Thr	Phe	Ala	Arg	Gly	Thr	Gly	Glu	Pro	Pro	Gly	Ile	Gly	Arg	Val	50	55	60	
Gly	Gln	Ala	Phe	Val	Asp	Ser	Leu	Arg	Gln	Gln	Thr	Gly	Met	Glu	Ile	65	70	75	80
Gly	Val	Tyr	Pro	Val	Asn	Tyr	Ala	Ala	Ser	Arg	Leu	Gln	Leu	His	Gly	85	90	95	
Gly	Asp	Gly	Ala	Asn	Asp	Ala	Ile	Ser	His	Ile	Lys	Ser	Met	Ala	Ser	100	105	110	
Ser	Cys	Pro	Asn	Thr	Lys	Leu	Val	Leu	Gly	Gly	Tyr	Ser	Gln	Gly	Ala	115	120	125	
Thr	Val	Ile	Asp	Ile	Val	Ala	Gly	Val	Pro	Leu	Gly	Ser	Ile	Ser	Phe	130	135	140	
Gly	Ser	Pro	Leu	Pro	Ala	Ala	Tyr	Ala	Asp	Asn	Val	Ala	Ala	Val	Ala	145	150	155	160
Val	Phe	Gly	Asn	Pro	Ser	Asn	Arg	Ala	Gly	Gly	Ser	Leu	Ser	Ser	Leu	165	170	175	
Ser	Pro	Leu	Phe	Gly	Ser	Lys	Ala	Ile	Asp	Leu	Cys	Asn	Pro	Thr	Asp	180	185	190	
Pro	Ile	Cys	His	Val	Gly	Pro	Gly	Asn	Glu	Phe	Ser	Gly	His	Ile	Asp	195	200	205	
Gly	Tyr	Ile	Pro	Thr	Tyr	Thr	Thr	Gln	Ala	Ala	Ser	Phe	Val	Val	Gln	210	215	220	
Arg	Leu	Arg	Ala	Gly	Ser	Val	Pro	His	Leu	Pro	Gly	Ser	Val	Pro	Gln				

225 230 235 240
 Leu Pro Gly Ser Val Leu Gln Met Pro Gly Thr Ala Ala Pro Ala Pro
 245 250 255
 Glu Ser Leu His Gly Arg
 260

<210> 57
 <211> 1000
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 57
 cgaggagacc gacgatctgc tcgacgaaat cgacgacgtc ctcgaggaga acgccgagga 60
 cttcgtccgc gcatacgtcc aaaagggcgg acagtgacct ggccgttgcc cgatcgacctg 120
 tccattaatt cactctctgg aacacccgct gtagacctat cttctttcac tgacttctctg 180
 cgccgccagg cgccggagtt gctgccggca agcatcagcg gcggtgcgcc actcgcaggc 240
 ggcatgcgc aactgccgca cggcaccacc attgtcgcgc tgaaataccc cggcgggtgtt 300
 gtcattggcgg gtgaccggcg ttcgacgcag ggcaacatga tttctgggcg tgatgtgcgc 360
 aagggtgtata tcaccgatga ctacaccgct accggcatcg ctggcacggc tgcggtcgcg 420
 gttgagtttg cccggctgta tgccgtggaa cttgagcact acgagaagct cgaggggtgtg 480
 ccgctgacgt ttgccggcaa aatcaaccgg ctggcgatta tgggtgcgtgg caatctggcg 540
 gccgcgatgc agggctctgct ggcgttgccg ttgctggcgg gctacgacat tcatgctctt 600
 gaccgcgaga gcgcggggtcg tatcgtttcg ttcgacgccg ccggcggttg gaacatcgag 660
 gaagaggggt atcaggcgggt gggctcgggt tcgctgttcg cgaagtcgtc gatgaagaag 720
 ttgtattcgc aggttaccga cggtgattcg gggctgcggg tggcggtcga ggcgctctac 780
 gacgccgccg acgacgactc cgccaccggc ggtccggacc tgggtgcgggg catctttccg 840
 acggcgggtga tcatcgacgc cgacggggcg gttgacgtgc cggagagccg gattgccgaa 900
 ttggcccgcg cgatcatcga aagccgttcg ggtgcggata ctttcggctc cgatggcgggt 960
 gagaagttag ttttccgtat ttcattctcg ctgagcaggc 1000

<210> 58
 <211> 291
 <212> PRT
 <213> Mycobacterium tuberculosis

<400> 58

Met Thr Trp Pro Leu Pro Asp Arg Leu Ser Ile Asn Ser Leu Ser Gly

1	5	10	15
Thr Pro Ala Val	Asp Leu Ser Ser	Phe Thr Asp Phe Leu	Arg Arg Gln
20		25	30
Ala Pro Glu Leu	Leu Pro Ala Ser	Ile Ser Gly Gly	Ala Pro Leu Ala
35	40	45	
Gly Gly Asp Ala	Gln Leu Pro His	Gly Thr Thr Ile	Val Ala Leu Lys
50	55	60	
Tyr Pro Gly Gly	Val Val Met Ala	Gly Asp Arg Arg	Ser Thr Gln Gly
65	70	75	80
Asn Met Ile Ser	Gly Arg Asp Val	Arg Lys Val Tyr	Ile Thr Asp Asp
	85	90	95
Tyr Thr Ala Thr	Gly Ile Ala Gly	Thr Ala Ala Val	Ala Val Glu Phe
	100	105	110
Ala Arg Leu Tyr	Ala Val Glu Leu	Glu His Tyr Glu	Lys Leu Glu Gly
	115	120	125
Val Pro Leu Thr	Phe Ala Gly Lys	Ile Asn Arg Leu	Ala Ile Met Val
	130	135	140
Arg Gly Asn Leu	Ala Ala Ala Met	Gln Gly Leu Leu	Ala Leu Pro Leu
145	150	155	160
Leu Ala Gly Tyr	Asp Ile His Ala	Ser Asp Pro Gln	Ser Ala Gly Arg
	165	170	175
Ile Val Ser Phe	Asp Ala Ala Gly	Gly Trp Asn Ile	Glu Glu Glu Gly
	180	185	190
Tyr Gln Ala Val	Gly Ser Gly Ser	Leu Phe Ala Lys	Ser Ser Met Lys
	195	200	205
Lys Leu Tyr Ser	Gln Val Thr Asp	Gly Asp Ser Gly	Leu Arg Val Ala
	210	215	220
Val Glu Ala Leu	Tyr Asp Ala Ala	Asp Asp Asp Ser	Ala Thr Gly Gly
225	230	235	240
Pro Asp Leu Val	Arg Gly Ile Phe	Pro Thr Ala Val	Ile Ile Asp Ala
	245	250	255
Asp Gly Ala Val	Asp Val Pro Glu	Ser Arg Ile Ala	Glu Leu Ala Arg
	260	265	270
Ala Ile Ile Glu	Ser Arg Ser Gly	Ala Asp Thr Phe	Gly Ser Asp Gly
	275	280	285
Gly Glu Lys			
290			

<211> 899
<212> DNA
<213> Mycobacterium tuberculosis

<400> 59
ttggcccgcg cgatcatcga aagccgttcg ggtgcggata ctttcggctc cgatggcgggt 60
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tggcgcgtaa gggcattgcg cgggccaaaa gcgtggtggc gctggcctat gccggtggtg 180
tgctgttcgt cgcggagaat ccgtcgcggg cgctgcagaa gatcagtgag ctctacgac 240
gggtgggttt tgcggctgcg gcaagttcaa cgagttcgac aatttgcgcc gcggcgggat 300
ccagttcgcc gacaccgcg gttacgccta tgaccgtcgt gacgtcacgg gtcggcagtt 360
ggccaatgtc tacgcgcaga ctctaggcac catcttcacc gaacaggcca agccctacga 420
ggttgagttg tgtgtggccg aggtggcgca ttacggcgag acgaaacgcc ctgagttgta 480
tcgtattacc tacgacgggt cgatcgccga cgagccgcat ttcgtggtga tgggcggcac 540
cacggagccg atcgccaacg cgctcaaaga gtcgtatgcc gagaacgcca gcctgaccga 600
cgccctgcgt atcgcggtcg ctgcattgcg ggccggcagt gccgacacct cgggtggtga 660
tcaaccacc cttggcgtgg ccagcttaga ggtggccgtt ctcgatgcca accggccacg 720
gcgcgcgttc cggcgcacga ccggctccgc cctgcaagcg ttgctggtag accaggaaag 780
cccgcagtct gacggcgaat cgtcgggctg agtccgaaag tccgacgcgt gtctgggacc 840
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<210> 60
<211> 248
<212> PRT
<213> Mycobacterium tuberculosis

<400> 60
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Ser Glu Leu Ala Arg Lys Gly Ile Ala Arg Ala Lys Ser Val Val Ala
20 25 30
Leu Ala Tyr Ala Gly Gly Val Leu Phe Val Ala Glu Asn Pro Ser Arg
35 40 45
Ser Leu Gln Lys Ile Ser Glu Leu Tyr Asp Arg Val Gly Phe Ala Ala
50 55 60
Ala Gly Lys Phe Asn Glu Phe Asp Asn Leu Arg Arg Gly Gly Ile Gln
65 70 75 80

Phe Ala Asp Thr Arg Gly Tyr Ala Tyr Asp Arg Arg Asp Val Thr Gly
 85 90 95
 Arg Gln Leu Ala Asn Val Tyr Ala Gln Thr Leu Gly Thr Ile Phe Thr
 100 105 110
 Glu Gln Ala Lys Pro Tyr Glu Val Glu Leu Cys Val Ala Glu Val Ala
 115 120 125
 His Tyr Gly Glu Thr Lys Arg Pro Glu Leu Tyr Arg Ile Thr Tyr Asp
 130 135 140
 Gly Ser Ile Ala Asp Glu Pro His Phe Val Val Met Gly Gly Thr Thr
 145 150 155 160
 Glu Pro Ile Ala Asn Ala Leu Lys Glu Ser Tyr Ala Glu Asn Ala Ser
 165 170 175
 Leu Thr Asp Ala Leu Arg Ile Ala Val Ala Ala Leu Arg Ala Gly Ser
 180 185 190
 Ala Asp Thr Ser Gly Gly Asp Gln Pro Thr Leu Gly Val Ala Ser Leu
 195 200 205
 Glu Val Ala Val Leu Asp Ala Asn Arg Pro Arg Arg Ala Phe Arg Arg
 210 215 220
 Ile Thr Gly Ser Ala Leu Gln Ala Leu Leu Val Asp Gln Glu Ser Pro
 225 230 235 240
 Gln Ser Asp Gly Glu Ser Ser Gly
 245

<210> 61
 <211> 1560
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 61
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 tctcggagcc ggtcccggcg ggtatgtcgc ggcgattcgc gccgcacagc tcggcctgag 180
 cactgcaatc gtcgaacca agtactgggg cggagtatgc ctcaatgtcg gctgtatccc 240
 atccaaggcg ctgttgcgca acgccgaact ggtccacatc ttcaccaagg acgccaaagc 300
 atttggcatc agcggcgagg tgaccttcga ctacggcatc gcctatgacc gcagccgaaa 360
 ggtagccgag ggcagggtgg ccggtgtgca cttcctgatg aagaagaaca agatcaccga 420
 gatccacggg tacggcacat ttgccgacgc caacacgttg ttggttgatc tcaacgacgg 480
 cggtacagaa tcggtcacgt tcgacaacgc catcatcgcg accggcagta gcacccggct 540

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ggttccccgc acctcactgt cggccaacgt agtcacctac gaggaacaga tctgtgccg      600
agagctgccg aaatcgatca ttattgccgg agctggtgcc attggcatgg agttcggcta      660
cgtgctgaag aactacggcg ttgacgtgac catcgtggaa ttccttccgc gggcgctgcc      720
caacgaggac gccgatgtgt ccaaggagat cgagaagcag ttcaaaaagc tgggtgtcac      780
gatcctgacc gccacgaagg tcgagtccat cgccgatggc gggtcgcagg tcaccgtgac      840
cgtcaccaag gacggcgtgg cgcaagagct taaggcggaa aagggtgttc aggccatcgg      900
atttgcgccc aacgtcgaag ggtacgggct ggacaaggca ggcgtcgcgc tgaccgaccg      960
caaggctatc ggtgtcgacg actacatgcg taccaacgtg ggccacatct acgctatcgg     1020
cgatgtcaat ggattactgc agctggcgca cgtcgccgag gcacaaggcg tggtagccgc     1080
cgaaaccatt gccggtgcag agactttgac gctgggcgac catcggtatg tgccgcgcgc     1140
gacgttctgt cagccaaacg ttgccagctt cgggctcacc gagcagcaag cccgcaacga     1200
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gtgggacctg accgccagcg agctggctcg caacgtccac acccaccaa cgatgtctga     1440
ggcgctgcag gagtgcttcc acggcctggt tggccacatg atcaatttct gagcgggtca     1500
tgacgaggcg cgcgagcact gacaccccc agatcatcat gggtgccatc ggtggtgtgg     1560

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<210> 62
<211> 464
<212> PRT
<213> Mycobacterium tuberculosis

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<400> 62
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Met Thr His Tyr Asp Val Val Val Leu Gly Ala Gly Pro Gly Gly Tyr
1          5          10          15

Val Ala Ala Ile Arg Ala Ala Gln Leu Gly Leu Ser Thr Ala Ile Val
          20          25          30

Glu Pro Lys Tyr Trp Gly Gly Val Cys Leu Asn Val Gly Cys Ile Pro
          35          40          45

Ser Lys Ala Leu Leu Arg Asn Ala Glu Leu Val His Ile Phe Thr Lys
          50          55          60

Asp Ala Lys Ala Phe Gly Ile Ser Gly Glu Val Thr Phe Asp Tyr Gly
65          70          75          80

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Ile	Ala	Tyr	Asp	Arg	Ser	Arg	Lys	Val	Ala	Glu	Gly	Arg	Val	Ala	Gly	85	90	95
Val	His	Phe	Leu	Met	Lys	Lys	Asn	Lys	Ile	Thr	Glu	Ile	His	Gly	Tyr	100	105	110
Gly	Thr	Phe	Ala	Asp	Ala	Asn	Thr	Leu	Leu	Val	Asp	Leu	Asn	Asp	Gly	115	120	125
Gly	Thr	Glu	Ser	Val	Thr	Phe	Asp	Asn	Ala	Ile	Ile	Ala	Thr	Gly	Ser	130	135	140
Ser	Thr	Arg	Leu	Val	Pro	Gly	Thr	Ser	Leu	Ser	Ala	Asn	Val	Val	Thr	145	150	155
Tyr	Glu	Glu	Gln	Ile	Leu	Ser	Arg	Glu	Leu	Pro	Lys	Ser	Ile	Ile	Ile	165	170	175
Ala	Gly	Ala	Gly	Ala	Ile	Gly	Met	Glu	Phe	Gly	Tyr	Val	Leu	Lys	Asn	180	185	190
Tyr	Gly	Val	Asp	Val	Thr	Ile	Val	Glu	Phe	Leu	Pro	Arg	Ala	Leu	Pro	195	200	205
Asn	Glu	Asp	Ala	Asp	Val	Ser	Lys	Glu	Ile	Glu	Lys	Gln	Phe	Lys	Lys	210	215	220
Leu	Gly	Val	Thr	Ile	Leu	Thr	Ala	Thr	Lys	Val	Glu	Ser	Ile	Ala	Asp	225	230	235
Gly	Gly	Ser	Gln	Val	Thr	Val	Thr	Val	Thr	Lys	Asp	Gly	Val	Ala	Gln	245	250	255
Glu	Leu	Lys	Ala	Glu	Lys	Val	Leu	Gln	Ala	Ile	Gly	Phe	Ala	Pro	Asn	260	265	270
Val	Glu	Gly	Tyr	Gly	Leu	Asp	Lys	Ala	Gly	Val	Ala	Leu	Thr	Asp	Arg	275	280	285
Lys	Ala	Ile	Gly	Val	Asp	Asp	Tyr	Met	Arg	Thr	Asn	Val	Gly	His	Ile	290	295	300
Tyr	Ala	Ile	Gly	Asp	Val	Asn	Gly	Leu	Leu	Gln	Leu	Ala	His	Val	Ala	305	310	315
Glu	Ala	Gln	Gly	Val	Val	Ala	Ala	Glu	Thr	Ile	Ala	Gly	Ala	Glu	Thr	325	330	335
Leu	Thr	Leu	Gly	Asp	His	Arg	Met	Leu	Pro	Arg	Ala	Thr	Phe	Cys	Gln	340	345	350
Pro	Asn	Val	Ala	Ser	Phe	Gly	Leu	Thr	Glu	Gln	Gln	Ala	Arg	Asn	Glu	355	360	365
Gly	Tyr	Asp	Val	Val	Val	Ala	Lys	Phe	Pro	Phe	Thr	Ala	Asn	Ala	Lys	370	375	380

Ala His Gly Val Gly Asp Pro Ser Gly Phe Val Lys Leu Val Ala Asp
 385 390 395 400

Ala Lys His Gly Glu Leu Leu Gly Gly His Leu Val Gly His Asp Val
 405 410 415

Ala Glu Leu Leu Pro Glu Leu Thr Leu Ala Gln Arg Trp Asp Leu Thr
 420 425 430

Ala Ser Glu Leu Ala Arg Asn Val His Thr His Pro Thr Met Ser Glu
 435 440 445

Ala Leu Gln Glu Cys Phe His Gly Leu Val Gly His Met Ile Asn Phe
 450 455 460

<210> 63
 <211> 550
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 63
 ggcccggctc gcggccgccc tgcaggaaaa gaaggcctgc ccaggcccag actcagccga 60
 gtagtcaccc agtaccac accaggaagg accgcccac atggcaaaagc tctccaccga 120
 cgaactgctg gacgcgttca aggaaatgac cctgttgag ctctccgact tcgtcaagaa 180
 gttcgaggag accttcgagg tcaccgccgc cgctccagtc gccgtcgccg ccgccgggtgc 240
 cgccccggcc ggtgccgccc tgcaggctgc cgaggagcag tccgagttcg acgtgatcct 300
 tgaggccgcc ggcgacaaga agatcggcgt catcaagggtg gtccgggaga tcgtttccgg 360
 cctgggcctc aaggaggcca aggacctggt cgacggcgcg cccaagccgc tgctggagaa 420
 ggtcgccaaag gaggccgccc acgaggccaa ggccaagctg gaggccgccc gcgccaccgt 480
 caccgtcaag tagctctgcc cagcgtgttc ttttgcgtct gctcggcccg tagcgaacac 540
 tgcgcccgt 550

<210> 64
 <211> 130
 <212> PRT
 <213> Mycobacterium tuberculosis

<400> 64

Met Ala Lys Leu Ser Thr Asp Glu Leu Leu Asp Ala Phe Lys Glu Met
 1 5 10 15

Thr Leu Leu Glu Leu Ser Asp Phe Val Lys Lys Phe Glu Glu Thr Phe
 20 25 30

Glu Val Thr Ala Ala Ala Pro Val Ala Val Ala Ala Ala Gly Ala Ala

35 40 45
 Pro Ala Gly Ala Ala Val Glu Ala Ala Glu Glu Gln Ser Glu Phe Asp
 50 55 60
 Val Ile Leu Glu Ala Ala Gly Asp Lys Lys Ile Gly Val Ile Lys Val
 65 70 75 80
 Val Arg Glu Ile Val Ser Gly Leu Gly Leu Lys Glu Ala Lys Asp Leu
 85 90 95
 Val Asp Gly Ala Pro Lys Pro Leu Leu Glu Lys Val Ala Lys Glu Ala
 100 105 110
 Ala Asp Glu Ala Lys Ala Lys Leu Glu Ala Ala Gly Ala Thr Val Thr
 115 120 125
 Val Lys
 130

<210> 65
 <211> 900
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 65
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 ccgattcaga cgggaatttc ggtaatccgc tgggggtgat caacgccagc aaggtcgaac 180
 accgcgacag gcagcagctg gcagcccaat cgggctacag cgaaaccata ttcgtcgatc 240
 ttcccagccc cggctcaacc accgcacacg ccaccatcca tactccccgc accgaaattc 300
 cgttcgccgg acaccgacc gtgggagcgt cctggtggct gcgcgagagg gggacgcaa 360
 ttaacacgct gcaggtgccg gccggcatcg tccaggtgag ctaccacggt gatctcaccg 420
 ccatcagcgc ccgctcggaa tgggcacccg agttcgccat ccacgacctg gattcacttg 480
 atgcgcttgc cgccgccgac cccgccgact ttccggacga catcgcgcac tacctctgga 540
 cctggaccga ccgctccgct ggctcgctgc gcgccgcat gtttgccgcc aacttgggcg 600
 tcaccgaaga cgaagcgacc ggtgccgagg ccattccgat taccgattac ctacgccgtg 660
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 ggggttcgggt agccggccga gttgtcagcg acggtgtggc acaactcgac tgacgtagag 780
 ctacgcgctg ccgatgcaac acggcggcaa ggtgatcctg caggggttgc ccgaccgcgc 840
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<210> 66
<211> 228
<212> PRT
<213> Mycobacterium tuberculosis

<400> 66

Met	Ala	Ile	Glu	Val	Ser	Val	Leu	Arg	Val	Phe	Thr	Asp	Ser	Asp	Gly	
1			5					10					15			
Asn	Phe	Gly	Asn	Pro	Leu	Gly	Val	Ile	Asn	Ala	Ser	Lys	Val	Glu	His	
		20					25					30				
Arg	Asp	Arg	Gln	Gln	Leu	Ala	Ala	Gln	Ser	Gly	Tyr	Ser	Glu	Thr	Ile	
		35					40					45				
Phe	Val	Asp	Leu	Pro	Ser	Pro	Gly	Ser	Thr	Thr	Ala	His	Ala	Thr	Ile	
	50					55					60					
His	Thr	Pro	Arg	Thr	Glu	Ile	Pro	Phe	Ala	Gly	His	Pro	Thr	Val	Gly	
65				70						75					80	
Ala	Ser	Trp	Trp	Leu	Arg	Glu	Arg	Gly	Thr	Pro	Ile	Asn	Thr	Leu	Gln	
			85					90						95		
Val	Pro	Ala	Gly	Ile	Val	Gln	Val	Ser	Tyr	His	Gly	Asp	Leu	Thr	Ala	
		100						105					110			
Ile	Ser	Ala	Arg	Ser	Glu	Trp	Ala	Pro	Glu	Phe	Ala	Ile	His	Asp	Leu	
	115						120					125				
Asp	Ser	Leu	Asp	Ala	Leu	Ala	Ala	Ala	Asp	Pro	Ala	Asp	Phe	Pro	Asp	
	130					135					140					
Asp	Ile	Ala	His	Tyr	Leu	Trp	Thr	Trp	Thr	Asp	Arg	Ser	Ala	Gly	Ser	
145					150					155					160	
Leu	Arg	Ala	Arg	Met	Phe	Ala	Ala	Asn	Leu	Gly	Val	Thr	Glu	Asp	Glu	
			165					170						175		
Ala	Thr	Gly	Ala	Ala	Ala	Ile	Arg	Ile	Thr	Asp	Tyr	Leu	Ser	Arg	Asp	
		180						185						190		
Leu	Thr	Ile	Thr	Gln	Gly	Lys	Gly	Ser	Leu	Ile	His	Thr	Thr	Trp	Ser	
	195						200					205				
Pro	Glu	Gly	Trp	Val	Arg	Val	Ala	Gly	Arg	Val	Val	Ser	Asp	Gly	Val	
	210					215					220					
Ala	Gln	Leu	Asp													
225																

<210> 67
<211> 500
<212> DNA
<213> Mycobacterium tuberculosis

<400> 67
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 ggcattggggg gtgtgggtgg tttgggtggg gccgggttcgg gtccggcgat gggcatgggg 180
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 cgctccgaca ggtcgtcgga cgtcgggggc ggagtctggc cgttgggctt cggtaggttt 360
 gccgatgcgg gcgccggcgg aaacgaagca ctggggtcga agaacggctg cgctgccata 420
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 acaacctctc agagtgcgct 500

<210> 68
 <211> 139
 <212> PRT
 <213> Mycobacterium tuberculosis

<400> 68
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 Gly Ala Gly Ser Gly Pro Ala Met Gly Met Gly Gly Val Gly Gly Leu
 20 25 30
 Gly Gly Ala Gly Ser Gly Pro Ala Met Gly Met Gly Gly Val Gly Gly
 35 40 45
 Leu Asp Ala Ala Gly Ser Gly Glu Gly Gly Ser Pro Ala Ala Ile Gly
 50 55 60
 Ile Gly Val Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly
 65 70 75 80
 Ala Asp Thr Asn Arg Ser Asp Arg Ser Ser Asp Val Gly Gly Gly Val
 85 90 95
 Trp Pro Leu Gly Phe Gly Arg Phe Ala Asp Ala Gly Ala Gly Gly Asn
 100 105 110
 Glu Ala Leu Gly Ser Lys Asn Gly Cys Ala Ala Ile Ser Ser Gly Ala
 115 120 125
 Ser Ile Pro Ser Cys Gly Arg Lys Ser Leu Ser
 130 135

<210> 69
 <211> 2050
 <212> DNA

<213> Mycobacterium tuberculosis

<400> 69

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ccgcctccgc caactccgat gccgatcgcc gcaggagagc cgccctcgcc ggaaccggcc	300
gcatctaaac caccacacc ccccatgccc atcgccggac ccgaaccggc cccacccaaa	360
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cctccgatgc ccatcgccgg acctgcaccc accccaaccg aatcccagtt ggcgcccccc	480
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cacgtaccct cgcacgggcc acatcaaccc cggcgcaccg caccagcacc gccctgggca	600
aagatgccaa tcggcgaacc cccgcccgtt ccgtccagac cgtctgcgtc cccggccgaa	660
ccaccgaccc ggccctgcccc ccaacactcc cgacgtgcgc gccggggtca ccgctatcgc	720
acagacaccg aacgaaacgt cgggaaggta gcaactggtc catccatcca ggcgcggctg	780
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cccagccctt cgccgcagcg caactccggt cggcgtgccg agcgacgcgt ccacccgat	960
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cgtcgccgca agcgtgcagc gccggatctc gacgcgacac agaaatcctt aaggccggcg	1080
gccaaagggc cgaaggtgaa gaaggtgaag cccagaaaac cgaaggccac gaagccgccc	1140
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cgcgggtcgt atcagatcgc cgtcgtcggg ctcaaagggt gggctggcaa aaccacgctg	1320
acagcagcgt tggggctcgc gttggctcag gtgcggggcc accggatcct ggctctagac	1380
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gtcaatgcgg tcaatctgga agtgctgccg gcaccggaat acagctcggc gcagcgcgcg	1560
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 aatcacatca tgccgggaga acccaatgtc gcagttaaag acctggtgcg gcatttcgaa 1860
 cagcaagttc aaccgcggcg ggtcgtggtc atgccgtggg acaggcacat tgcggccgga 1920
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 ctggtcctac 2050

<210> 70
 <211> 666
 <212> PRT
 <213> Mycobacterium tuberculosis

<400> 70

Met	Ala	Ala	Asp	Tyr	Asp	Lys	Leu	Phe	Arg	Pro	His	Glu	Gly	Met	Glu	1	5	10	15
Ala	Pro	Asp	Asp	Met	Ala	Ala	Gln	Pro	Phe	Phe	Asp	Pro	Ser	Ala	Ser	20	25	30	
Phe	Pro	Pro	Ala	Pro	Ala	Ser	Ala	Asn	Leu	Pro	Lys	Pro	Asn	Gly	Gln	35	40	45	
Thr	Pro	Pro	Pro	Thr	Ser	Asp	Asp	Leu	Ser	Glu	Arg	Phe	Val	Ser	Ala	50	55	60	
Pro	Pro	Pro	Pro	Pro	Pro	Pro	Pro	Pro	Pro	Pro	Pro	Pro	Thr	Pro	Met	65	70	75	80
Pro	Ile	Ala	Ala	Gly	Glu	Pro	Pro	Ser	Pro	Glu	Pro	Ala	Ala	Ser	Lys	85	90	95	
Pro	Pro	Thr	Pro	Pro	Met	Pro	Ile	Ala	Gly	Pro	Glu	Pro	Ala	Pro	Pro	100	105	110	
Lys	Pro	Pro	Thr	Pro	Pro	Met	Pro	Ile	Ala	Gly	Pro	Glu	Pro	Ala	Pro	115	120	125	
Pro	Lys	Pro	Pro	Thr	Pro	Pro	Met	Pro	Ile	Ala	Gly	Pro	Ala	Pro	Thr	130	135	140	
Pro	Thr	Glu	Ser	Gln	Leu	Ala	Pro	Pro	Arg	Pro	Pro	Thr	Pro	Gln	Thr	145	150	155	160
Pro	Thr	Gly	Ala	Pro	Gln	Gln	Pro	Glu	Ser	Pro	Ala	Pro	His	Val	Pro	165	170	175	

Ser	His	Gly	Pro	His	Gln	Pro	Arg	Arg	Thr	Ala	Pro	Ala	Pro	Pro	Trp	180	185	190
Ala	Lys	Met	Pro	Ile	Gly	Glu	Pro	Pro	Pro	Ala	Pro	Ser	Arg	Pro	Ser	195	200	205
Ala	Ser	Pro	Ala	Glu	Pro	Pro	Thr	Arg	Pro	Ala	Pro	Gln	His	Ser	Arg	210	215	220
Arg	Ala	Arg	Arg	Gly	His	Arg	Tyr	Arg	Thr	Asp	Thr	Glu	Arg	Asn	Val	225	230	235
Gly	Lys	Val	Ala	Thr	Gly	Pro	Ser	Ile	Gln	Ala	Arg	Leu	Arg	Ala	Glu	245	250	255
Glu	Ala	Ser	Gly	Ala	Gln	Leu	Ala	Pro	Gly	Thr	Glu	Pro	Ser	Pro	Ala	260	265	270
Pro	Leu	Gly	Gln	Pro	Arg	Ser	Tyr	Leu	Ala	Pro	Pro	Thr	Arg	Pro	Ala	275	280	285
Pro	Thr	Glu	Pro	Pro	Pro	Ser	Pro	Ser	Pro	Gln	Arg	Asn	Ser	Gly	Arg	290	295	300
Arg	Ala	Glu	Arg	Arg	Val	His	Pro	Asp	Leu	Ala	Ala	Gln	His	Ala	Ala	305	310	315
Ala	Gln	Pro	Asp	Ser	Ile	Thr	Ala	Ala	Thr	Thr	Gly	Gly	Arg	Arg	Arg	325	330	335
Lys	Arg	Ala	Ala	Pro	Asp	Leu	Asp	Ala	Thr	Gln	Lys	Ser	Leu	Arg	Pro	340	345	350
Ala	Ala	Lys	Gly	Pro	Lys	Val	Lys	Lys	Val	Lys	Pro	Gln	Lys	Pro	Lys	355	360	365
Ala	Thr	Lys	Pro	Pro	Lys	Val	Val	Ser	Gln	Arg	Gly	Trp	Arg	His	Trp	370	375	380
Val	His	Ala	Leu	Thr	Arg	Ile	Asn	Leu	Gly	Leu	Ser	Pro	Asp	Glu	Lys	385	390	395
Tyr	Glu	Leu	Asp	Leu	His	Ala	Arg	Val	Arg	Arg	Asn	Pro	Arg	Gly	Ser	405	410	415
Tyr	Gln	Ile	Ala	Val	Val	Gly	Leu	Lys	Gly	Gly	Ala	Gly	Lys	Thr	Thr	420	425	430
Leu	Thr	Ala	Ala	Leu	Gly	Ser	Thr	Leu	Ala	Gln	Val	Arg	Ala	Asp	Arg	435	440	445
Ile	Leu	Ala	Leu	Asp	Ala	Asp	Pro	Gly	Ala	Gly	Asn	Leu	Ala	Asp	Arg	450	455	460
Val	Gly	Arg	Gln	Ser	Gly	Ala	Thr	Ile	Ala	Asp	Val	Leu	Ala	Glu	Lys	465	470	475

Glu Leu Ser His Tyr Asn Asp Ile Arg Ala His Thr Ser Val Asn Ala
 485 490 495
 Val Asn Leu Glu Val Leu Pro Ala Pro Glu Tyr Ser Ser Ala Gln Arg
 500 505 510
 Ala Leu Ser Asp Ala Asp Trp His Phe Ile Ala Asp Pro Ala Ser Arg
 515 520 525
 Phe Tyr Asn Leu Val Leu Ala Asp Cys Gly Ala Gly Phe Phe Asp Pro
 530 535 540
 Leu Thr Arg Gly Val Leu Ser Thr Val Ser Gly Val Val Val Val Ala
 545 550 555 560
 Ser Val Ser Ile Asp Gly Ala Gln Gln Ala Ser Val Ala Leu Asp Trp
 565 570 575
 Leu Arg Asn Asn Gly Tyr Gln Asp Leu Ala Ser Arg Ala Cys Val Val
 580 585 590
 Ile Asn His Ile Met Pro Gly Glu Pro Asn Val Ala Val Lys Asp Leu
 595 600 605
 Val Arg His Phe Glu Gln Gln Val Gln Pro Gly Arg Val Val Val Met
 610 615 620
 Pro Trp Asp Arg His Ile Ala Ala Gly Thr Glu Ile Ser Leu Asp Leu
 625 630 635 640
 Leu Asp Pro Ile Tyr Lys Arg Lys Val Leu Glu Leu Ala Ala Ala Leu
 645 650 655
 Ser Asp Asp Phe Glu Arg Ala Gly Arg Arg
 660 665

<210> 71
 <211> 1890
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 71
 gcagc gatga ggagg agcgg cgcca acggc ccg cgccggc gac gatgcaa agcgc agcga 60
 tgagg agggag cggcg cgcat gactg ctgaa ccg gaagtac ggacg ctgcg cgagg ttgtg 120
 ctggacc agc tcggc actgc tgaat cgcg gcg tacaaga tgtgg ctgcc gccgt ttgacc 180
 aatcc ggtcc cgctc aacga gctcat cgcc cgtgat cggc gacaac ccct gcg atttgcc 240
 ctgggg gatca tggat gaacc gcgcc gccat ctacagg atg tgtgggg cggt agacg tttcc 300
 gggg ccggcg gcaac atcgg tattg ggggc gcacct caaa ccggg aagtc gacg ctactg 360
 cagac gatgg tgatg tcggc cgccg ccaca cactc accgc gcaac gttca gttct attgca 420
 atcgac cttag gtggc gggcg gctgat ctat ctcgaaa acc ttccac acgt cgg tgggggta 480

gccaatcggg	ccgagcccga	caaggtcaac	cgggtgggtcg	cagagatgca	agccgtcatg	540
cggcaacggg	aaaccacctt	caaggaacac	cgagtgggct	cgatcgggat	gtaccggcag	600
ctgcgtgacg	atccaagtca	acccgttgcg	tccgatccat	acggcgacgt	ctttctgac	660
atcgacggat	ggcccggttt	tgtcggcgag	ttccccgacc	ttgaggggca	ggttcaagat	720
ctggccgccc	aggggctggg	gttcggcgtc	cacgtcatca	tctccacgcc	acgtggaca	780
gagctgaagt	cgcggtgttcg	cgactacctc	ggcaccaaga	tcgagttccg	gcttggtgac	840
gtcaatgaaa	cccagatcga	ccggattacc	cgcgagatcc	cggcgaatcg	tccgggtcgg	900
gcagtgtcga	tggaaaagca	ccatctgatg	atcggcgtgc	ccagggttcga	cggcgtgcac	960
agcgccgata	acctgggtgga	ggcgatcacc	gcgggggtga	cgcagatcgc	ttcccagcac	1020
accgaacagg	cacctccggg	gcgggtcctg	ccggagcgta	tccacctgca	cgaactcgac	1080
ccgaaccgcg	cgggaccaga	gtccgactac	cgcactcgct	gggagattcc	gatcggcttg	1140
cgcgagacgg	acctgacgcc	ggctcactgc	cacatgcaca	cgaaccgcga	cctactgatc	1200
ttcggtgcg	ccaaatcggg	caagacgacc	attgcccacg	cgatcgcgcg	cgccatttgt	1260
gcccgaataa	gtccccagca	ggtgcggttc	atgctcgcgg	actaccgctc	gggcctgctg	1320
gacgcggtgc	cggacaccca	tctgctgggc	gccggcgcg	tcaaccgcaa	cagcgcgctg	1380
ctagacgagg	ccgctcaagc	actggcggtc	aacctgaaga	agcggttgcc	gccgaccgac	1440
ctgacgacgg	cgcagctacg	ctcgcgttcg	tggtggagcg	gatttgacgt	cgtgcttctg	1500
gtcgacgatt	ggcacatgat	cgtgggtgcc	gccgggggga	tgccgccgat	ggcaccgctg	1560
gccccgttat	tgccggcggc	ggcagatata	gggttgacac	tcattgtcac	ctgtcagatg	1620
agccaggctt	acaaggcaac	catggacaag	ttcgtcggcg	ccgcattcgg	gtcgggcgct	1680
ccgacaatgt	tcctttcggg	cgagaagcag	gaattcccat	ccagtgagtt	caaggtcaag	1740
cggcgcccc	ctggccaggc	atttctcgtc	tcgccagacg	gcaaagaggt	catccaggcc	1800
ccctacatcg	agcctccaga	agaagtgttc	gcagcacccc	caagcgccgg	ttaagattat	1860
ttcattgccg	gtgtagcagg	acccgagctc				1890

<210> 72
 <211> 591
 <212> PRT
 <213> Mycobacterium tuberculosis
 <400> 72

Met	Thr	Ala	Glu	Pro	Glu	Val	Arg	Thr	Leu	Arg	Glu	Val	Val	Leu	Asp	1	5	10	15
Gln	Leu	Gly	Thr	Ala	Glu	Ser	Arg	Ala	Tyr	Lys	Met	Trp	Leu	Pro	Pro	20	25	30	
Leu	Thr	Asn	Pro	Val	Pro	Leu	Asn	Glu	Leu	Ile	Ala	Arg	Asp	Arg	Arg	35	40	45	
Gln	Pro	Leu	Arg	Phe	Ala	Leu	Gly	Ile	Met	Asp	Glu	Pro	Arg	Arg	His	50	55	60	
Leu	Gln	Asp	Val	Trp	Gly	Val	Asp	Val	Ser	Gly	Ala	Gly	Gly	Asn	Ile	65	70	75	80
Gly	Ile	Gly	Gly	Ala	Pro	Gln	Thr	Gly	Lys	Ser	Thr	Leu	Leu	Gln	Thr	85	90	95	
Met	Val	Met	Ser	Ala	Ala	Ala	Thr	His	Ser	Pro	Arg	Asn	Val	Gln	Phe	100	105	110	
Tyr	Cys	Ile	Asp	Leu	Gly	Gly	Gly	Gly	Leu	Ile	Tyr	Leu	Glu	Asn	Leu	115	120	125	
Pro	His	Val	Gly	Gly	Val	Ala	Asn	Arg	Ser	Glu	Pro	Asp	Lys	Val	Asn	130	135	140	
Arg	Val	Val	Ala	Glu	Met	Gln	Ala	Val	Met	Arg	Gln	Arg	Glu	Thr	Thr	145	150	155	160
Phe	Lys	Glu	His	Arg	Val	Gly	Ser	Ile	Gly	Met	Tyr	Arg	Gln	Leu	Arg	165	170	175	
Asp	Asp	Pro	Ser	Gln	Pro	Val	Ala	Ser	Asp	Pro	Tyr	Gly	Asp	Val	Phe	180	185	190	
Leu	Ile	Ile	Asp	Gly	Trp	Pro	Gly	Phe	Val	Gly	Glu	Phe	Pro	Asp	Leu	195	200	205	
Glu	Gly	Gln	Val	Gln	Asp	Leu	Ala	Ala	Gln	Gly	Leu	Gly	Phe	Gly	Val	210	215	220	
His	Val	Ile	Ile	Ser	Thr	Pro	Arg	Trp	Thr	Glu	Leu	Lys	Ser	Arg	Val	225	230	235	240
Arg	Asp	Tyr	Leu	Gly	Thr	Lys	Ile	Glu	Phe	Arg	Leu	Gly	Asp	Val	Asn	245	250	255	
Glu	Thr	Gln	Ile	Asp	Arg	Ile	Thr	Arg	Glu	Ile	Pro	Ala	Asn	Arg	Pro	260	265	270	
Gly	Arg	Ala	Val	Ser	Met	Glu	Lys	His	His	Leu	Met	Ile	Gly	Val	Pro	275	280	285	
Arg	Phe	Asp	Gly	Val	His	Ser	Ala	Asp	Asn	Leu	Val	Glu	Ala	Ile	Thr	290	295	300	

Ala Gly Val Thr Gln Ile Ala Ser Gln His Thr Glu Gln Ala Pro Pro
 305 310 315 320
 Val Arg Val Leu Pro Glu Arg Ile His Leu His Glu Leu Asp Pro Asn
 325 330 335
 Pro Pro Gly Pro Glu Ser Asp Tyr Arg Thr Arg Trp Glu Ile Pro Ile
 340 345 350
 Gly Leu Arg Glu Thr Asp Leu Thr Pro Ala His Cys His Met His Thr
 355 360 365
 Asn Pro His Leu Leu Ile Phe Gly Ala Ala Lys Ser Gly Lys Thr Thr
 370 375 380
 Ile Ala His Ala Ile Ala Arg Ala Ile Cys Ala Arg Asn Ser Pro Gln
 385 390 395 400
 Gln Val Arg Phe Met Leu Ala Asp Tyr Arg Ser Gly Leu Leu Asp Ala
 405 410 415
 Val Pro Asp Thr His Leu Leu Gly Ala Gly Ala Ile Asn Arg Asn Ser
 420 425 430
 Ala Ser Leu Asp Glu Ala Ala Gln Ala Leu Ala Val Asn Leu Lys Lys
 435 440 445
 Arg Leu Pro Pro Thr Asp Leu Thr Thr Ala Gln Leu Arg Ser Arg Ser
 450 455 460
 Trp Trp Ser Gly Phe Asp Val Val Leu Leu Val Asp Asp Trp His Met
 465 470 475 480
 Ile Val Gly Ala Ala Gly Gly Met Pro Pro Met Ala Pro Leu Ala Pro
 485 490 495
 Leu Leu Pro Ala Ala Ala Asp Ile Gly Leu His Ile Ile Val Thr Cys
 500 505 510
 Gln Met Ser Gln Ala Tyr Lys Ala Thr Met Asp Lys Phe Val Gly Ala
 515 520 525
 Ala Phe Gly Ser Gly Ala Pro Thr Met Phe Leu Ser Gly Glu Lys Gln
 530 535 540
 Glu Phe Pro Ser Ser Glu Phe Lys Val Lys Arg Arg Pro Pro Gly Gln
 545 550 555 560
 Ala Phe Leu Val Ser Pro Asp Gly Lys Glu Val Ile Gln Ala Pro Tyr
 565 570 575
 Ile Glu Pro Pro Glu Glu Val Phe Ala Ala Pro Pro Ser Ala Gly
 580 585 590

<210> 73
 <211> 15
 <212> PRT

<213> Mycobacterium tuberculosis

<400> 73

Asp	Pro	Val	Asp	Asp	Ala	Phe	Ile	Ala	Lys	Leu	Asn	Thr	Ala	Gly
1			5						10					15

<210> 74

<211> 14

<212> PRT

<213> Mycobacterium tuberculosis

<220>

<221> MISC_FEATURE

<222> (14)..(14)

<223> "Xaa" is unknown

<400> 74

Asp	Pro	Val	Asp	Ala	Ile	Ile	Asn	Leu	Asp	Asn	Tyr	Gly	Xaa
1			5					10					

<210> 75

<211> 15

<212> PRT

<213> Mycobacterium tuberculosis

<220>

<221> MISC_FEATURE

<222> (5)..(5)

<223> "Xaa" is unknown

<400> 75

Ala	Glu	Met	Lys	Xaa	Phe	Lys	Asn	Ala	Ile	Val	Gln	Glu	Ile	Asp
1			5					10						15

<210> 76

<211> 14

<212> PRT

<213> Mycobacterium tuberculosis

<220>

<221> variant

<222> (3)..(3)

<223> Ala is Ala or Gln

<220>

<221> variant

<222> (7)..(7)

<223> Thr is Gly or Thr

<220>

<221> MISC_FEATURE
<222> (11)..(11)
<223> "Xaa" is unknown

<400> 76

Val Ile Ala Gly Met Val Thr His Ile His Xaa Val Ala Gly
1 5 10

<210> 77
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 77

Thr Asn Ile Val Val Leu Ile Lys Gln Val Pro Asp Thr Trp Ser
1 5 10 15

<210> 78
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 78

Ala Ile Glu Val Ser Val Leu Arg Val Phe Thr Asp Ser Asp Gly
1 5 10 15

<210> 79
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 79

Ala Lys Leu Ser Thr Asp Glu Leu Leu Asp Ala Phe Lys Glu Met
1 5 10 15

<210> 80
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<220>
<221> variant
<222> (4)..(4)
<223> Asp is Asp or Glu

<400> 80

Asp Pro Ala Asp Ala Pro Asp Val Pro Thr Ala Ala Gln Leu Thr
1 5 10 15

<210> 81

<211> 50
<212> PRT
<213> Mycobacterium tuberculosis

<400> 81

Ala Glu Asp Val Arg Ala Glu Ile Val Ala Ser Val Leu Glu Val Val
1 5 10 15
Val Asn Glu Gly Asp Gln Ile Asp Lys Gly Asp Val Val Val Leu Leu
20 25 30
Glu Ser Met Tyr Met Glu Ile Pro Val Leu Ala Glu Ala Ala Gly Thr
35 40 45

Val Ser
50

<210> 82
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 82

Thr Thr Ser Pro Asp Pro Tyr Ala Ala Leu Pro Lys Leu Pro Ser
1 5 10 15

<210> 83
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 83

Thr Glu Tyr Glu Gly Pro Lys Thr Lys Phe His Ala Leu Met Gln
1 5 10 15

<210> 84
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 84

Thr Thr Ile Val Ala Leu Lys Tyr Pro Gly Gly Val Val Met Ala
1 5 10 15

<210> 85
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<220>
<221> MISC_FEATURE
<222> (10)..(10)
<223> "Xaa" is unknown

<220>
<221> MISC_FEATURE
<222> (15)..(15)
<223> "Xaa" is unknown

<400> 85

Ser	Phe	Pro	Tyr	Phe	Ile	Ser	Pro	Glu	Xaa	Ala	Met	Arg	Glu	Xaa
1				5				10					15	

<210> 86
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 86

Thr	His	Tyr	Asp	Val	Val	Val	Leu	Gly	Ala	Gly	Pro	Gly	Gly	Tyr
1				5				10					15	

<210> 87
<211> 450
<212> DNA
<213> Mycobacterium tuberculosis

<400> 87
agccccggttaa tcgagttcgg gcaatgctga ccatcggggtt tgtttccggc tataaccgaa 60
cggttttgtgt acgggataca aatacagggg ggaagaagt aggcaaattgg aaaaaatgtc 120
acatgatccg atcgctgccg acattggcac gcaagtgagc gacaacgctc tgcacggcgt 180
gacggccggc tgcacggcgc tgacgtcggt gaccgggctg gttcccgcgg gggccgatga 240
gggtctccgcc caagcggcga cggcggttcac atcggagggc atccaattgc tggcttccaa 300
tgcacgggcc caagaccagc tccaccgtgc gggcgaagcg gtccaggacg tgcgccgcac 360
ctattcgcaa atcgacgacg gcgccgccgg cgtcttcgcc taataggccc ccaacacatc 420
ggagggagtg atcaccatgc tgtggcacgc 450

<210> 88
<211> 98
<212> PRT
<213> Mycobacterium tuberculosis

<400> 88

Met	Glu	Lys	Met	Ser	His	Asp	Pro	Ile	Ala	Ala	Asp	Ile	Gly	Thr	Gln
1				5					10					15	

Val Ser Asp Asn Ala Leu His Gly Val Thr Ala Gly Ser Thr Ala Leu

	20		25		30
Thr Ser Val Thr Gly Leu Val Pro Ala Gly Ala Asp Glu Val Ser Ala					
35		40		45	
Gln Ala Ala Thr Ala Phe Thr Ser Glu Gly Ile Gln Leu Leu Ala Ser					
50		55		60	
Asn Ala Ser Ala Gln Asp Gln Leu His Arg Ala Gly Glu Ala Val Gln					
65		70		75	80
Asp Val Ala Arg Thr Tyr Ser Gln Ile Asp Asp Gly Ala Ala Gly Val					
	85		90		95
Phe Ala					

<210> 89
 <211> 460
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 89
 gcaaccggct tttcgatcag ctgagacatc agcggcgtgc gggtaacga cccacctgcg 60
 ccaggtagcg actccgcgcg cagcaggccc gcgcccgcgc tggggcctga tccaccagcc 120
 agcggatggt tgcacagcgg actggtgccg agcaggccca tctgcgcggc ttctcgtcgc 180
 gctggggttc cgccgccggt gccgccacc tggctgaaca acgacgtcac ctgctgcagc 240
 ggctgggtca gctgctgcat cgggccgctc atctcaccga gttggccgag ggtctgggta 300
 gccgccggcg gcaactggcc aaccggtgtt gagctgccag gggagggcat tccgaagatc 360
 gggttcgtcg tgctctggct cgcgccggga tcaaggatcg acgccatcgg ctcgagcttc 420
 tcgaaaagcg tgtaaccgc ggtctcggcc tggtagacct 460

<210> 90
 <211> 139
 <212> PRT
 <213> Mycobacterium tuberculosis

<400> 90
 Met Arg Val Asn Asp Pro Pro Ala Pro Gly Ser Asp Ser Ala Arg Ser
 1 5 10 15
 Arg Pro Ala Pro Ala Leu Gly Pro Asp Pro Pro Ala Ser Gly Trp Phe
 20 25 30
 Asp Ser Gly Leu Val Pro Ser Arg Pro Ile Cys Ala Ala Ser Ser Ser
 35 40 45
 Ala Gly Leu Pro Pro Pro Val Pro Pro Thr Trp Leu Asn Asn Asp Val

50		55		60
Thr Cys Cys Ser Gly Trp Val Ser Cys Cys Ile Gly Pro Leu Ile Ser				
65		70		75
				80
Pro Ser Trp Pro Arg Val Trp Val Ala Ala Gly Gly Asn Trp Pro Thr				
	85		90	
				95
Gly Val Glu Leu Pro Gly Glu Gly Ile Pro Lys Ile Gly Phe Val Val				
	100		105	
				110
Leu Trp Leu Ala Pro Gly Ser Arg Ile Asp Ala Ile Gly Ser Ser Phe				
	115		120	
				125
Ser Lys Ser Val Leu Thr Ala Val Ser Ala Trp				
	130		135	

<210> 91
 <211> 1200
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 91	
taataggccc ccaacacatc ggagggagtg atcaccatgc tgtggcacgc aatgccaccg	60
gagctaaata ccgcacggct gatggccggc gcgggctcgg ctccaatgct tgcggcggcc	120
gcgggatggc agacgctttc ggcggtcttg gacgctcagg ccgtcagatt gaccgcgcgc	180
ctgaactctc tgggagaagc ctggactgga ggtggcagcg acaaggcgct tgcggctgca	240
acgccgatgg tggctctggct acaaaccgcg tcaacacagg ccaagaccgc tgcgatgcag	300
gcgacggcgc aagccgcggc atacaccag gccatggcca cgacgccgtc gctgccggag	360
atcgccgcca accacatcac ccaggccgtc cttacggcca ccaacttctt cggtatcaac	420
acgatccga tcgcgttgac cgagatggat tatttcattc gtatgtggaa ccaggcagcc	480
ctggcaatgg aggtctacca ggccgagacc gcggttaaca cgcttttcga gaagctcgag	540
ccgatggcgt cgatccttga tcccggcgcg agccagagca cgacgaacct gatcttcgga	600
atgccctccc ctggcagctc aacaccggtt ggccagttgc cgccggcggc taccagacc	660
ctcggccaac tgggtgagat gagcggcccc atgcagcagc tgaccagacc gctgcagcag	720
gtgacgtcgt tgttcagcca ggtgggcggc accggcggcg gcaaccagc cgacgaggaa	780
gccgcgcaga tgggcctgct cggcaccagt ccgctgtcga accatccgct ggctggtgga	840
tcaggcccca gcgcgggcgc gggcctgctg cgcgcgaggt cgctacctgg cgcaggtggg	900
tcgttgaccc gcacgccgct gatgtctcag ctgatcgaag agccggttgc cccctcgggtg	960
atgccggcgg ctgctgccgg atcgtcggcg acgggtggcg ccgctccggt ggggtgcggga	1020

gcgatggggcc aggggtgcgca atccggcggc tccaccaggc cgggtctggt cgcgccggca 1080
ccgctcgcgc aggagcgtga agaagacgac gaggacgact gggacgaaga ggacgactgg 1140
tgagctcccg taatgacaac agacttcccg gccacccggg ccggaagact tgccaacatt 1200

<210> 92
<211> 371
<212> PRT
<213> Mycobacterium tuberculosis

<400> 92

Met Ile Thr Met Leu Trp His Ala Met Pro Pro Glu Leu Asn Thr Ala
1 5 10 15

Arg Leu Met Ala Gly Ala Gly Pro Ala Pro Met Leu Ala Ala Ala Ala
20 25 30

Gly Trp Gln Thr Leu Ser Ala Ala Leu Asp Ala Gln Ala Val Glu Leu
35 40 45

Thr Ala Arg Leu Asn Ser Leu Gly Glu Ala Trp Thr Gly Gly Gly Ser
50 55 60

Asp Lys Ala Leu Ala Ala Ala Thr Pro Met Val Val Trp Leu Gln Thr
65 70 75 80

Ala Ser Thr Gln Ala Lys Thr Arg Ala Met Gln Ala Thr Ala Gln Ala
85 90 95

Ala Ala Tyr Thr Gln Ala Met Ala Thr Thr Pro Ser Leu Pro Glu Ile
100 105 110

Ala Ala Asn His Ile Thr Gln Ala Val Leu Thr Ala Thr Asn Phe Phe
115 120 125

Gly Ile Asn Thr Ile Pro Ile Ala Leu Thr Glu Met Asp Tyr Phe Ile
130 135 140

Arg Met Trp Asn Gln Ala Ala Leu Ala Met Glu Val Tyr Gln Ala Glu
145 150 155 160

Thr Ala Val Asn Thr Leu Phe Glu Lys Leu Glu Pro Met Ala Ser Ile
165 170 175

Leu Asp Pro Gly Ala Ser Gln Ser Thr Thr Asn Pro Ile Phe Gly Met
180 185 190

Pro Ser Pro Gly Ser Ser Thr Pro Val Gly Gln Leu Pro Pro Ala Ala
195 200 205

Thr Gln Thr Leu Gly Gln Leu Gly Glu Met Ser Gly Pro Met Gln Gln
210 215 220

Leu Thr Gln Pro Leu Gln Gln Val Thr Ser Leu Phe Ser Gln Val Gly

225		230		235		240
Gly Thr Gly Gly Gly Asn Pro Ala Asp Glu Glu Ala Ala Gln Met Gly						
	245			250		255
Leu Leu Gly Thr Ser Pro Leu Ser Asn His Pro Leu Ala Gly Gly Ser						
	260		265			270
Gly Pro Ser Ala Gly Ala Gly Leu Leu Arg Ala Glu Ser Leu Pro Gly						
	275		280		285	
Ala Gly Gly Ser Leu Thr Arg Thr Pro Leu Met Ser Gln Leu Ile Glu						
	290		295		300	
Lys Pro Val Ala Pro Ser Val Met Pro Ala Ala Ala Ala Gly Ser Ser						
305		310		315		320
Ala Thr Gly Gly Ala Ala Pro Val Gly Ala Gly Ala Met Gly Gln Gly						
	325		330			335
Ala Gln Ser Gly Gly Ser Thr Arg Pro Gly Leu Val Ala Pro Ala Pro						
	340		345		350	
Leu Ala Gln Glu Arg Glu Glu Asp Asp Glu Asp Asp Trp Asp Glu Glu						
	355		360		365	
Asp Asp Trp						
	370					

<210> 93
 <211> 1000
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 93	
gacgcgacac agaaatcctt aaggccggcg gccaaaggggc cgaagggtgaa gaagggtgaag	60
ccccagaaac cgaaggccac gaagccgccc aaagtgggtgt cgcagcgcggt ctggcgacat	120
tgggtgcatg cgttgacgcg aatcaacctg ggctgtcac cgcagagaaa gtacgagctg	180
gacctgcacg ctcgagtcgg ccgcaatccc cgcgggtcgt atcagatcgc cgtcgtcgggt	240
ctcaaagggtg gggctggcaa aaccacgctg acagcagcgt tggggtcgac gttgggtcag	300
gtgcggggccg accggatcct ggctctagac gcggatccag gcgccgaaa cctcgccgat	360
cgggtagggc gacaatcggg cgcgaccatc gctgatgtgc ttgcagaaaa agagctgtcg	420
cactacaacg acatccgcbc acacactagc gtcaatgcgg tcaatctgga agtgctgccg	480
gcaccggaat acagctcggc gcagcgcgcg ctcagcgacg ccgactggca tttcatcgcc	540
gatcctgcgt cgagggtttta caacctcgtc ttgggtgatt gtggggccgg cttcttcgac	600
ccgctgaccc gcggcggtgt gtccacgggtg tccgggtgtc tggtcgtggc aagtgtctca	660

atcgacggcg cacaacaggc gtcggtcgcg ttggactggg tgcgcaacaa cggttaccaa 720
gatttggcga gccgcgcatg cgtgggtcatc aatcacatca tgccgggaga acccaatgtc 780
gcagttaaag acctggtgcg gcatttcgaa cagcaagttc aaccgggccg ggtcgtggtc 840
atgccgtggg acaggcacat tgcggccgga accgagattt cactcgactt gctcgaccct 900
atctacaagc gcaaggctct cgaattggcc gcagcgctat ccgacgattt cgagagggct 960
ggacgtcgtt gagcgcacct gctgttgctg ctggtcctac 1000

<210> 94
<211> 308
<212> PRT
<213> Mycobacterium tuberculosis

<400> 94

Met	Lys	Lys	Val	Lys	Pro	Gln	Lys	Pro	Lys	Ala	Thr	Lys	Pro	Pro	Lys	1	5	10	15
Val	Val	Ser	Gln	Arg	Gly	Trp	Arg	His	Trp	Val	His	Ala	Leu	Thr	Arg	20	25	30	
Ile	Asn	Leu	Gly	Leu	Ser	Pro	Asp	Glu	Lys	Tyr	Glu	Leu	Asp	Leu	His	35	40	45	
Ala	Arg	Val	Arg	Arg	Asn	Pro	Arg	Gly	Ser	Tyr	Gln	Ile	Ala	Val	Val	50	55	60	
Gly	Leu	Lys	Gly	Gly	Ala	Gly	Lys	Thr	Thr	Leu	Thr	Ala	Ala	Leu	Gly	65	70	75	80
Ser	Thr	Leu	Ala	Gln	Val	Arg	Ala	Asp	Arg	Ile	Leu	Ala	Leu	Asp	Ala	85	90	95	
Asp	Pro	Gly	Ala	Gly	Asn	Leu	Ala	Asp	Arg	Val	Gly	Arg	Gln	Ser	Gly	100	105	110	
Ala	Thr	Ile	Ala	Asp	Val	Leu	Ala	Glu	Lys	Glu	Leu	Ser	His	Tyr	Asn	115	120	125	
Asp	Ile	Arg	Ala	His	Thr	Ser	Val	Asn	Ala	Val	Asn	Leu	Glu	Val	Leu	130	135	140	
Pro	Ala	Pro	Glu	Tyr	Ser	Ser	Ala	Gln	Arg	Ala	Leu	Ser	Asp	Ala	Asp	145	150	155	160
Trp	His	Phe	Ile	Ala	Asp	Pro	Ala	Ser	Arg	Phe	Tyr	Asn	Leu	Val	Leu	165	170	175	
Ala	Asp	Cys	Gly	Ala	Gly	Phe	Phe	Asp	Pro	Leu	Thr	Arg	Gly	Val	Leu	180	185	190	
Ser	Thr	Val	Ser	Gly	Val	Val	Val	Val	Ala	Ser	Val	Ser	Ile	Asp	Gly				

195	200	205
Ala Gln Gln Ala Ser Val	Ala Leu Asp Trp Leu	Arg Asn Asn Gly Tyr
210	215	220
Gln Asp Leu Ala Ser Arg	Ala Cys Val Val	Ile Asn His Ile Met Pro
225	230	235 240
Gly Glu Pro Asn Val	Ala Val Lys Asp Leu	Val Arg His Phe Glu Gln
245	250	255
Gln Val Gln Pro Gly Arg	Val Val Val Met Pro	Trp Asp Arg His Ile
260	265	270
Ala Ala Gly Thr Glu Ile	Ser Leu Asp Leu Leu	Asp Pro Ile Tyr Lys
275	280	285
Arg Lys Val Leu Glu Leu	Ala Ala Ala Leu Ser	Asp Asp Phe Glu Arg
290	295	300
Ala Gly Arg Arg		
305		

<210> 95
 <211> 34
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 95
 aagagtagat ctatgatggc cgaggatggt cgcg

34

<210> 96
 <211> 27
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 96
 cggcgacgac ggatcctacc gcgtcgg

27

<210> 97
 <211> 28
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 97
 ccttgggaga tctttggacc ccggttgc

28

<210> 98
 <211> 25
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 98
 gacgagatct tatgggctta ctgac

25

<210> 99
<211> 33
<212> DNA
<213> Mycobacterium tuberculosis

<400> 99
ccccccagat ctgcaccacc ggcatcggcg ggc 33

<210> 100
<211> 24
<212> DNA
<213> Mycobacterium tuberculosis

<400> 100
gcggcggatc cggtgcttag ccgg 24

<210> 101
<211> 32
<212> DNA
<213> Mycobacterium tuberculosis

<400> 101
ccggctgaga tctatgacag aatacgaagg gc 32

<210> 102
<211> 24
<212> DNA
<213> Mycobacterium tuberculosis

<400> 102
ccccgccagg gaactagagg cggc 24

<210> 103
<211> 38
<212> DNA
<213> Mycobacterium tuberculosis

<400> 103
ctgccgagat ctaccacat tgtcgcgctg aaataccc 38

<210> 104
<211> 25
<212> DNA
<213> Mycobacterium tuberculosis

<400> 104
cgccatggcc ttacgcgcca actcg 25

<210> 105

<211> 32
 <212> DNA
 <213> Mycobacterium tuberculosis

 <400> 105
 ggcgagatc tgtgagtttt ccgtatttca tc 32

 <210> 106
 <211> 25
 <212> DNA
 <213> Mycobacterium tuberculosis

 <400> 106
 cgcgtcgagc catggtagg cgcag 25

 <210> 107
 <211> 32
 <212> DNA
 <213> Mycobacterium tuberculosis

 <400> 107
 gaggaagatc tatgacaact tcacccgacc cg 32

 <210> 108
 <211> 28
 <212> DNA
 <213> Mycobacterium tuberculosis

 <400> 108
 catgaagcca tggcccgcag gctgcatg 28

 <210> 109
 <211> 33
 <212> DNA
 <213> Mycobacterium tuberculosis

 <400> 109
 ggccgagatc tgtgaccac tatgacgtcg tcg 33

 <210> 110
 <211> 36
 <212> DNA
 <213> Mycobacterium tuberculosis

 <400> 110
 ggcgcccatg gtcagaaatt gatcatgtgg ccaacc 36

 <210> 111
 <211> 33
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 111
 ccgggagatc tatggcaaag ctctccaccg acg 33

<210> 112
 <211> 32
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 112
 cgctgggcag agctacttga cggtgacggt gg 32

<210> 113
 <211> 36
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 113
 ggcccagatc tatggccatt gaggtttcgg tgttgc 36

<210> 114
 <211> 26
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 114
 cgccgtgttg catggcagcg ctgagc 26

<210> 115
 <211> 24
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 115
 ggacgttcaa gcgacacatc gccg 24

<210> 116
 <211> 24
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 116
 cagcacgaac gcgccgtcga tggc 24

<210> 117
 <211> 26
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 117
 acagatctgt gacggacatg aaccgg 26

<210> 118
<211> 28
<212> DNA
<213> Mycobacterium tuberculosis

<400> 118
ttttccatgg tcacggggccc ccggtact 28

<210> 119
<211> 26
<212> DNA
<213> Mycobacterium tuberculosis

<400> 119
acagatctgt gcccatggca cagata 26

<210> 120
<211> 27
<212> DNA
<213> Mycobacterium tuberculosis

<400> 120
tttaagcttc taggcgccca gcgcggc 27

<210> 121
<211> 26
<212> DNA
<213> Mycobacterium tuberculosis

<400> 121
acagatctgc gcatgcggat ccgtgt 26

<210> 122
<211> 28
<212> DNA
<213> Mycobacterium tuberculosis

<400> 122
ttttccatgg tcatccggcg tgatcgag 28

<210> 123
<211> 26
<212> DNA
<213> Mycobacterium tuberculosis

<400> 123
acagatctgt aatggcagac tgtgat 26

<210> 124

<211> 28
<212> DNA
<213> Mycobacterium tuberculosis

<400> 124
ttttccatgg tcaggagatg gtgatcga 28

<210> 125
<211> 26
<212> DNA
<213> Mycobacterium tuberculosis

<400> 125
acagatctgc cggctacccc ggtgcc 26

<210> 126
<211> 28
<212> DNA
<213> Mycobacterium tuberculosis

<400> 126
ttttccatgg ctattgcagc tttccggc 28

<210> 127
<211> 50
<212> PRT
<213> Mycobacterium tuberculosis

<400> 127

Ala Glu Asp Val Arg Ala Glu Ile Val Ala Ser Val Leu Glu Val Val
1 5 10 15

Val Asn Glu Gly Asp Gln Ile Asp Lys Gly Asp Val Val Val Leu Leu
20 25 30

Glu Ser Met Tyr Met Glu Ile Pro Val Leu Ala Glu Ala Ala Gly Thr
35 40 45

Val Ser
50

<210> 128
<211> 49
<212> PRT
<213> Mycobacterium tuberculosis

<400> 128

Ala Glu Asp Val Arg Ala Glu Ile Val Ala Ser Val Leu Glu Val Val
1 5 10 15

Val Asn Glu Gly Asp Gln Ile Asp Lys Gly Asp Val Val Val Leu Leu
20 25 30

Glu Ser Met Met Glu Ile Pro Val Leu Ala Glu Ala Ala Gly Thr Val
35 40 45

Ser

<210> 129
<211> 50
<212> PRT
<213> Mycobacterium tuberculosis

<400> 129

Ala Glu Asp Val Arg Ala Glu Ile Val Ala Ser Val Leu Glu Val Val
1 5 10 15

Val Asn Glu Gly Asp Gln Ile Asp Lys Gly Asp Val Val Val Leu Leu
20 25 30

Glu Ser Met Lys Met Glu Ile Pro Val Leu Ala Glu Ala Ala Gly Thr
35 40 45

Val Ser
50

<210> 130
<211> 33
<212> DNA
<213> Mycobacterium tuberculosis

<400> 130
ccgggagatc tatggcaaag ctctccaccg acg 33

<210> 131
<211> 32
<212> DNA
<213> Mycobacterium tuberculosis

<400> 131
cgctgggcag agctacttga cggtgacggt gg 32

<210> 132
<211> 36
<212> DNA
<213> Mycobacterium tuberculosis

<400> 132
ggcgccggca agcttgccat gacagagcag cagtgg 36

<210> 133
<211> 26
<212> DNA
<213> Mycobacterium tuberculosis

<400> 133	
cgaactcgcc ggatcccgtg tttcgc	26
<210> 134	
<211> 32	
<212> DNA	
<213> Mycobacterium tuberculosis	
<400> 134	
ggcaaccgcg agatctttct cccggccggg gc	32
<210> 135	
<211> 27	
<212> DNA	
<213> Mycobacterium tuberculosis	
<400> 135	
ggcaagcttg ccggcgcta acgaact	27
<210> 136	
<211> 30	
<212> DNA	
<213> Mycobacterium tuberculosis	
<400> 136	
ggaccagat ctatgacaga gcagcagtgg	30
<210> 137	
<211> 47	
<212> DNA	
<213> Mycobacterium tuberculosis	
<400> 137	
ccggcagccc cggccgggag aaaagctttg cgaacatccc agtgacg	47
<210> 138	
<211> 44	
<212> DNA	
<213> Mycobacterium tuberculosis	
<400> 138	
gttcgcaaag cttttctccc ggccggggct gccggtcgag tacc	44
<210> 139	
<211> 20	
<212> DNA	
<213> Mycobacterium tuberculosis	
<400> 139	
ccttcggtgg atcccgtcag	20

<210> 140
 <211> 450
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 140
 tggcgctgtc accgaggaac ctgtcaatgt cgtcgagcag tactgaaccg ttccgagaaa 60
 ggccagcatg aacgtcaccg tatccattcc gaccatcctg cggccccaca ccggcggcca 120
 gaagagtgtc tcggccagcg gcgatacctt ggggtgccgtc atcagcgacc tggaggccaa 180
 ctattcgggc atttccgagc gcctgatgga cccgtcttcc ccaggtaagt tgcaccgctt 240
 cgtgaacatc tacgtcaacg acgaggacgt gcggttctcc ggcggcttgg ccaccgcgat 300
 cgctgacggg gactcgggtc ccatacctccc cgccgtggcc ggtgggtgag cggagcacat 360
 gacacgatac gactcgtgtg tgcaggcctt gggcaacacg ccgctgggtg gcctgcagcg 420
 attgtcgcca cgctgggatg acgggcgaga 450

<210> 141
 <211> 93
 <212> PRT
 <213> Mycobacterium tuberculosis

<400> 141
 Met Asn Val Thr Val Ser Ile Pro Thr Ile Leu Arg Pro His Thr Gly
 1 5 10 15
 Gly Gln Lys Ser Val Ser Ala Ser Gly Asp Thr Leu Gly Ala Val Ile
 20 25 30
 Ser Asp Leu Glu Ala Asn Tyr Ser Gly Ile Ser Glu Arg Leu Met Asp
 35 40 45
 Pro Ser Ser Pro Gly Lys Leu His Arg Phe Val Asn Ile Tyr Val Asn
 50 55 60
 Asp Glu Asp Val Arg Phe Ser Gly Gly Leu Ala Thr Ala Ile Ala Asp
 65 70 75 80
 Gly Asp Ser Val Thr Ile Leu Pro Ala Val Ala Gly Gly
 85 90

<210> 142
 <211> 480
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 142
 ggtgttcccg cggccggcta tgacaacagt caatgtgcat gacaagttac aggtattagg 60

tccagggttca	acaaggagagac	aggcaacatg	gcaacacggt	ttatgacgga	tccgcacgcg	120
atgcggggaca	tggcggggccg	ttttgagggtg	cacgcccaga	cgggtggagga	cgagggtcgc	180
cggatgtggg	cgtccgcgca	aaacatctcg	ggcgcgggct	ggagtggcat	ggccgagggcg	240
acctcgctag	acaccatggc	ccagatgaat	caggcgtttc	gcaacatcgt	gaacatgctg	300
cacgggggtgc	gtgacgggct	ggttcgcgac	gccacaact	acgagcagca	agagcaggcc	360
tcccagcaga	tcctcagcag	ctaacgtcag	ccgctgcagc	acaatacttt	tacaagcgaa	420
qqagaacagg	ttcgatgacc	atcaactatc	agttcqqtga	tgtcgaqgct	catggcgcca	480

<400> 143

Gly Arg Phe Glu Val His Ala Gln Thr Val Glu Asp Glu Ala Arg Arg
20 25 30

Ala Glu Ala Thr Ser Leu Asp Thr Met Ala Gln Met Asn Gln Ala Phe
50 55 60

Asp Ala Asn Asn Tyr Glu Gln Gln Glu Gln Ala Ser Gln Gln Ile Leu
85 90 95

```
<210> 144
<211> 940
<212> DNA
<213> Mycobacterium tuberculosis
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cacgctgaac ggcgaagccg tggccgccat cgcaccgatg cccccgggtg caccggaggg 300
gatgccgccg atctggaaca cctatatcgc ggtggacgac gtcgatgcgg tggaggacaa 360
ggtggtgccc gggggcgggc aggtgatgat gccggccttc gacatcggcg atgccggccg 420
gatgtcgttc atcaccgatc cgaccggcgc tgccgtgggc ctatggcagg ccaatcggca 480
catcggagcg acgttgggtca acgagacggg cacgctcatc tggaacgaac tgctcacgga 540
caagccggat ttggcgctag cgttctacga ggctgtggtt ggctcacc actcgagcat 600
ggagatagct gcgggccaga actatcgggt gctcaaggcc ggcgacgcgg aagtcggcgg 660
ctgtatggaa ccgccgatgc ccggcgtgcc gaatcattgg cacgtctact ttgcggtgga 720
tgacgccgac gccacggcgg ccaaagccgc cgcagcgggc ggccaggtca ttgcggaacc 780
ggctgacatt ccgtcgggtg gccgggtcgc cgtgttggtc gatccgcagg gcgcgatctt 840
cagtgtgttg aagccgcac cgcagcaata gggagcatcc cgggcaggcc cgccggcccg 900
cagattcgga gaatgctaga agctgccgcc ggcgccgccg 940

<210> 145
<211> 261
<212> PRT
<213> Mycobacterium tuberculosis

<400> 145

Met	Pro	Lys	Arg	Ser	Glu	Tyr	Arg	Gln	Gly	Thr	Pro	Asn	Trp	Val	Asp	1	5	10	15
Leu	Gln	Thr	Thr	Asp	Gln	Ser	Ala	Ala	Lys	Lys	Phe	Tyr	Thr	Ser	Leu	20	25	30	
Phe	Gly	Trp	Gly	Tyr	Asp	Asp	Asn	Pro	Val	Pro	Gly	Gly	Gly	Gly	Val	35	40	45	
Tyr	Ser	Met	Ala	Thr	Leu	Asn	Gly	Glu	Ala	Val	Ala	Ala	Ile	Ala	Pro	50	55	60	
Met	Pro	Pro	Gly	Ala	Pro	Glu	Gly	Met	Pro	Pro	Ile	Trp	Asn	Thr	Tyr	65	70	75	80
Ile	Ala	Val	Asp	Asp	Val	Asp	Ala	Val	Val	Asp	Lys	Val	Val	Pro	Gly	85	90	95	
Gly	Gly	Gln	Val	Met	Met	Pro	Ala	Phe	Asp	Ile	Gly	Asp	Ala	Gly	Arg	100	105	110	
Met	Ser	Phe	Ile	Thr	Asp	Pro	Thr	Gly	Ala	Ala	Val	Gly	Leu	Trp	Gln	115	120	125	

Ala Asn Arg His Ile Gly Ala Thr Leu Val Asn Glu Thr Gly Thr Leu
130 135 140

Ile Trp Asn Glu Leu Leu Thr Asp Lys Pro Asp Leu Ala Leu Ala Phe
145 150 155 160

Tyr Glu Ala Val Val Gly Leu Thr His Ser Ser Met Glu Ile Ala Ala
165 170 175

Gly Gln Asn Tyr Arg Val Leu Lys Ala Gly Asp Ala Glu Val Gly Gly
180 185 190

Cys Met Glu Pro Pro Met Pro Gly Val Pro Asn His Trp His Val Tyr
195 200 205

Phe Ala Val Asp Asp Ala Asp Ala Thr Ala Ala Lys Ala Ala Ala Ala
210 215 220

Gly Gly Gln Val Ile Ala Glu Pro Ala Asp Ile Pro Ser Val Gly Arg
225 230 235 240

Phe Ala Val Leu Ser Asp Pro Gln Gly Ala Ile Phe Ser Val Leu Lys
245 250 255

Pro Ala Pro Gln Gln
260

<210> 146
<211> 280
<212> DNA
<213> Mycobacterium tuberculosis

<400> 146
ccgaaaggcg gtgcaccgca cccagaagaa aaggaaagat cgagaaatgc cacagggaac 60
tgtgaagtgg ttcaacgcgg agaagggggtt cggttttata gccccgaag acggttccgc 120
ggatgtatatt gtccactaca cggagatcca gggaacgggc ttccgcaccc ttgaagaaaa 180
ccagaaggtc gagttcgaga tcggccacag ccctaagggc ccccaggcca ccggagtccg 240
ctcgctctga gttacccccg cgagcagacg caaaaagccc 280

<210> 147
<211> 67
<212> PRT
<213> Mycobacterium tuberculosis

<400> 147

Met Pro Gln Gly Thr Val Lys Trp Phe Asn Ala Glu Lys Gly Phe Gly
1 5 10 15

Phe Ile Ala Pro Glu Asp Gly Ser Ala Asp Val Phe Val His Tyr Thr
20 25 30

Glu Ile Gln Gly Thr Gly Phe Arg Thr Leu Glu Glu Asn Gln Lys Val
 35 40 45

Glu Phe Glu Ile Gly His Ser Pro Lys Gly Pro Gln Ala Thr Gly Val
 50 55 60

Arg Ser Leu
 65

<210> 148
 <211> 540
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 148
 atcgtgtcgt atcgagaacc ccggccggta tcagaacgcg ccagagcgca aacctttata 60
 acttcgtgtc ccaaattgtga cgaccatgga ccaagggtcc tgagatgaac ctacggcgcc 120
 atcagaccct gacgctgca ctgctggcgg catccgcggg cattctcagc gccgcggcct 180
 tcgccgcgcc agcacaggca aaccccgctg acgacgcgtt catcgccgcg ctgaacaatg 240
 ccggcgtaa ctacggcgat ccggtcgacg ccaaagcgct gggtcagtcc gtctgcccga 300
 tcctggccga gcccggcggg tcgtttaaca ccgcggtagc cagcgttggtg gcgcgcgccc 360
 aaggcatgtc ccaggacatg gcgcaaacct tcaccagtat cgcgatttcg atgtactgcc 420
 cctcggtgat ggcagacgtc gccagcggca acctgccggc cctgccagac atgccggggc 480
 tgcccgggtc ctaggcgtgc gcggctccta gccggtcctt aacggatcga tcgtggatgc 540

<210> 149
 <211> 129
 <212> PRT
 <213> Mycobacterium tuberculosis

<400> 149

Met Asn Leu Arg Arg His Gln Thr Leu Thr Leu Arg Leu Leu Ala Ala
 1 5 10 15

Ser Ala Gly Ile Leu Ser Ala Ala Ala Phe Ala Ala Pro Ala Gln Ala
 20 25 30

Asn Pro Val Asp Asp Ala Phe Ile Ala Ala Leu Asn Asn Ala Gly Val
 35 40 45

Asn Tyr Gly Asp Pro Val Asp Ala Lys Ala Leu Gly Gln Ser Val Cys
 50 55 60

Pro Ile Leu Ala Glu Pro Gly Gly Ser Phe Asn Thr Ala Val Ala Ser
 65 70 75 80

Val Val Ala Arg Ala Gln Gly Met Ser Gln Asp Met Ala Gln Thr Phe

			85					90					95				
Thr	Ser	Ile	Ala	Ile	Ser	Met	Tyr	Cys	Pro	Ser	Val	Met	Ala	Asp	Val		
			100					105					110				
Ala	Ser	Gly	Asn	Leu	Pro	Ala	Leu	Pro	Asp	Met	Pro	Gly	Leu	Pro	Gly		
		115					120					125					

Ser

<210> 150
 <211> 400
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 150	
atagtttggg gaaggtgtcc ataaatgagg ctgtcgttga ccgcattgag cgccggtgta	60
ggcgccgtgg caatgtcgtt gaccgtcggg gccgggggtcg cctccgcaga tcccgtggac	120
gcggtcatta acaccacctg caattacggg caggtagtag ctgcgtcaa cgcgacggat	180
ccgggggctg ccgcacagtt caacgcctca ccggtggcgc agtcctattt gcgcaatttc	240
ctcgccgcac cgccacctca gcgcgtgcc atggccgcgc aattgcaagc tgtgccgggg	300
gcggcacagt acatcggcct tgtcgagtcg gttgccggct cctgcaaaa ctattaagcc	360
catgcccccc ccatccccgc acccggcatc gtcgccgggg	400

<210> 151
 <211> 110
 <212> PRT
 <213> Mycobacterium tuberculosis

<400> 151

Met	Arg	Leu	Ser	Leu	Thr	Ala	Leu	Ser	Ala	Gly	Val	Gly	Ala	Val	Ala		
1				5					10					15			
Met	Ser	Leu	Thr	Val	Gly	Ala	Gly	Val	Ala	Ser	Ala	Asp	Pro	Val	Asp		
			20					25					30				
Ala	Val	Ile	Asn	Thr	Thr	Cys	Asn	Tyr	Gly	Gln	Val	Val	Ala	Ala	Leu		
		35					40					45					
Asn	Ala	Thr	Asp	Pro	Gly	Ala	Ala	Ala	Gln	Phe	Asn	Ala	Ser	Pro	Val		
	50					55					60						
Ala	Gln	Ser	Tyr	Leu	Arg	Asn	Phe	Leu	Ala	Ala	Pro	Pro	Pro	Gln	Arg		
65					70				75					80			
Ala	Ala	Met	Ala	Ala	Gln	Leu	Gln	Ala	Val	Pro	Gly	Ala	Ala	Gln	Tyr		
			85					90						95			

Ile Gly Leu Val Glu Ser Val Ala Gly Ser Cys Asn Asn Tyr
100 105 110

<210> 152
<211> 990
<212> DNA
<213> Mycobacterium tuberculosis

<400> 152
aatagtaata tcgctgtgcg gttgcaaaac gtgtgaccga ggttccgcag tcgagcgctg 60
cgggccgcct tcgaggagga cgaaccacag tcatgacgaa catcgtggtc ctgatcaagc 120
aggtcccaga tacctggctg gagcgcaagc tgaccgacgg cgatttcacg ctggaccgcg 180
aggccgccga cgcggtgctg gacgagatca acgagcgcgc cgtggaggaa gcgctacaga 240
ttcgggagaa agaggccgcc gacggcatcg aagggtcggg aaccgtgctg acggcggggc 300
ccgagcgcgc caccgaggcg atccgcaagg cgctgtcgat gggtgccgac aaggccgtcc 360
acctaaagga cgacggcatg cacggctcgg acgtcatcca aaccgggtgg gctttggcgc 420
gcgcgttggg caccatcgag ggcaccgagc tggatgatcg aggcaacgaa tcgaccgacg 480
gggtgggcgg tcggtgccc gccatcatcg ccgagtacct gggcctgccg cagctcacc 540
acctgcgcaa agtgtcgatc gagggcggca agatcaccgg cgagcgtgag accgatgagg 600
gcgtattcac cctcgaggcc acgtgcccg cggatgatcg cgtgaacgag aagatcaacg 660
agccgcgctt cccgtccttc aaaggcatca tggccgcca gaagaaggaa gttaccgtgc 720
tgaccctggc cgagatcggg gtcgagagcg acgaggtggg gctggccaac gccggatcca 780
ccgtgctggc gtcgacgccc aaaccggcca agactgccgg ggagaagggt accgacgagg 840
gtgaaggcgg caaccagatc gtgcagtacc tggttgcca gaaaatcatc taagacatac 900
gcacctcca aagacgagag cgatataacc catggctgaa gtactggtgc tcgttgagca 960
cgctgaaggc gcgttaaaga aggtcagcgc 990

<210> 153
<211> 266
<212> PRT
<213> Mycobacterium tuberculosis

<400> 153

Met Thr Asn Ile Val Val Leu Ile Lys Gln Val Pro Asp Thr Trp Ser
1 5 10 15

Glu Arg Lys Leu Thr Asp Gly Asp Phe Thr Leu Asp Arg Glu Ala Ala
20 25 30

Asp Ala Val Leu Asp Glu Ile Asn Glu Arg Ala Val Glu Glu Ala Leu
 35 40 45
 Gln Ile Arg Glu Lys Glu Ala Ala Asp Gly Ile Glu Gly Ser Val Thr
 50 55 60
 Val Leu Thr Ala Gly Pro Glu Arg Ala Thr Glu Ala Ile Arg Lys Ala
 65 70 75 80
 Leu Ser Met Gly Ala Asp Lys Ala Val His Leu Lys Asp Asp Gly Met
 85 90 95
 His Gly Ser Asp Val Ile Gln Thr Gly Trp Ala Leu Ala Arg Ala Leu
 100 105 110
 Gly Thr Ile Glu Gly Thr Glu Leu Val Ile Ala Gly Asn Glu Ser Thr
 115 120 125
 Asp Gly Val Gly Gly Ala Val Pro Ala Ile Ile Ala Glu Tyr Leu Gly
 130 135 140
 Leu Pro Gln Leu Thr His Leu Arg Lys Val Ser Ile Glu Gly Gly Lys
 145 150 155 160
 Ile Thr Gly Glu Arg Glu Thr Asp Glu Gly Val Phe Thr Leu Glu Ala
 165 170 175
 Thr Leu Pro Ala Val Ile Ser Val Asn Glu Lys Ile Asn Glu Pro Arg
 180 185 190
 Phe Pro Ser Phe Lys Gly Ile Met Ala Ala Lys Lys Lys Glu Val Thr
 195 200 205
 Val Leu Thr Leu Ala Glu Ile Gly Val Glu Ser Asp Glu Val Gly Leu
 210 215 220
 Ala Asn Ala Gly Ser Thr Val Leu Ala Ser Thr Pro Lys Pro Ala Lys
 225 230 235 240
 Thr Ala Gly Glu Lys Val Thr Asp Glu Gly Glu Gly Gly Asn Gln Ile
 245 250 255
 Val Gln Tyr Leu Val Ala Gln Lys Ile Ile
 260 265

<210> 154
 <211> 25
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 154
 ctgagatcta tgaacctacg gcgcc

25

<210> 155
 <211> 35
 <212> DNA

<213> Mycobacterium tuberculosis

<400> 155

ctcccatggt accctaggac ccgggcagcc ccggc

35

<210> 156

<211> 29

<212> DNA

<213> Mycobacterium tuberculosis

<400> 156

ctgagatcta tgaggctgtc gttgaccgc

29

<210> 157

<211> 30

<212> DNA

<213> Mycobacterium tuberculosis

<400> 157

ctccccgggc ttaatagttg ttgcaggagc

30

<210> 158

<211> 33

<212> DNA

<213> Mycobacterium tuberculosis

<400> 158

gcttagatct atgattttct gggcaaccag gta

33

<210> 159

<211> 30

<212> DNA

<213> Mycobacterium tuberculosis

<400> 159

gcttccatgg gcgaggcaca ggcgtgggaa

30

<210> 160

<211> 30

<212> DNA

<213> Mycobacterium tuberculosis

<400> 160

ctgagatcta gaatgccaca gggaactgtg

30

<210> 161

<211> 30

<212> DNA

<213> Mycobacterium tuberculosis

<400> 161

tctccccggg gtaactcaga gcgagcggac	30
<210> 162	
<211> 27	
<212> DNA	
<213> Mycobacterium tuberculosis	
<400> 162	
ctgagatcta tgaacgtcac cgtatcc	27
<210> 163	
<211> 27	
<212> DNA	
<213> Mycobacterium tuberculosis	
<400> 163	
tctccccggg ctcacccacc ggccacg	27
<210> 164	
<211> 30	
<212> DNA	
<213> Mycobacterium tuberculosis	
<400> 164	
ctgagatcta tggcaacacg ttttatgacg	30
<210> 165	
<211> 30	
<212> DNA	
<213> Mycobacterium tuberculosis	
<400> 165	
ctccccgggt tagctgctga ggatctgcth	30
<210> 166	
<211> 31	
<212> DNA	
<213> Mycobacterium tuberculosis	
<400> 166	
ctgaagatct atgcccaaga gaagcgaata c	31
<210> 167	
<211> 31	
<212> DNA	
<213> Mycobacterium tuberculosis	
<400> 167	
cggcagctgc tagcattctc cgaatctgcc g	31

<210> 168
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 168

Pro	Gln	Gly	Thr	Val	Lys	Trp	Phe	Asn	Ala	Glu	Lys	Gly	Phe	Gly
1				5					10					15

<210> 169
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<220>
<221> misc_feature
<222> (15)..(15)
<223> "Xaa" is unknown

<220>
<221> misc_feature
<222> (13)..(13)
<223> "Xaa" is unknown

<220>
<221> misc_feature
<222> (14)..(14)
<223> "Xaa" is unknown

<400> 169

Asn	Val	Thr	Val	Ser	Ile	Pro	Thr	Ile	Leu	Arg	Pro	Xaa	Xaa	Xaa
1				5					10					15

<210> 170
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<220>
<221> variant
<222> (1)..(1)
<223> Thr can be Thr or Ala

<400> 170

Thr	Arg	Phe	Met	Thr	Asp	Pro	His	Ala	Met	Arg	Asp	Met	Ala	Gly
1				5					10					15

<210> 171
<211> 15
<212> PRT

<213> Mycobacterium tuberculosis

<400> 171

Pro	Lys	Arg	Ser	Glu	Tyr	Arg	Gln	Gly	Thr	Pro	Asn	Trp	Val	Asp
1				5					10					15

<210> 172

<211> 404

<212> PRT

<213> Mycobacterium tuberculosis

<400> 172

Met	Ala	Thr	Val	Asn	Arg	Ser	Arg	His	His	His	His	His	His	His	His
1				5				10						15	

Ile	Glu	Gly	Arg	Ser	Phe	Ser	Arg	Pro	Gly	Leu	Pro	Val	Glu	Tyr	Leu
			20					25					30		

Gln	Val	Pro	Ser	Pro	Ser	Met	Gly	Arg	Asp	Ile	Lys	Val	Gln	Phe	Gln
		35					40					45			

Ser	Gly	Gly	Asn	Asn	Ser	Pro	Ala	Val	Tyr	Leu	Leu	Asp	Gly	Leu	Arg
	50					55					60				

Ala	Gln	Asp	Asp	Tyr	Asn	Gly	Trp	Asp	Ile	Asn	Thr	Pro	Ala	Phe	Glu
65					70					75					80

Trp	Tyr	Tyr	Gln	Ser	Gly	Leu	Ser	Ile	Val	Met	Pro	Val	Gly	Gly	Gln
				85					90					95	

Ser	Ser	Phe	Tyr	Ser	Asp	Trp	Tyr	Ser	Pro	Ala	Cys	Gly	Lys	Ala	Gly
			100					105					110		

Cys	Gln	Thr	Tyr	Lys	Trp	Glu	Thr	Phe	Leu	Thr	Ser	Glu	Leu	Pro	Gln
		115					120					125			

Trp	Leu	Ser	Ala	Asn	Arg	Ala	Val	Lys	Pro	Thr	Gly	Ser	Ala	Ala	Ile
	130					135					140				

Gly	Leu	Ser	Met	Ala	Gly	Ser	Ser	Ala	Met	Ile	Leu	Ala	Ala	Tyr	His
145					150					155					160

Pro	Gln	Gln	Phe	Ile	Tyr	Ala	Gly	Ser	Leu	Ser	Ala	Leu	Leu	Asp	Pro
				165					170					175	

Ser	Gln	Gly	Met	Gly	Pro	Ser	Leu	Ile	Gly	Leu	Ala	Met	Gly	Asp	Ala
			180					185					190		

Gly	Gly	Tyr	Lys	Ala	Ala	Asp	Met	Trp	Gly	Pro	Ser	Ser	Asp	Pro	Ala
		195					200					205			

Trp	Glu	Arg	Asn	Asp	Pro	Thr	Gln	Gln	Ile	Pro	Lys	Leu	Val	Ala	Asn
	210					215					220				

Asn	Thr	Arg	Leu	Trp	Val	Tyr	Cys	Gly	Asn	Gly	Thr	Pro	Asn	Glu	Leu
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

225		230		235		240
Gly Gly Ala Asn Ile Pro Ala Glu Phe Leu Glu Asn Phe Val Arg Ser						
	245			250		255
Ser Asn Leu Lys Phe Gln Asp Ala Tyr Asn Ala Ala Gly Gly His Asn						
	260			265		270
Ala Val Phe Asn Phe Pro Pro Asn Gly Thr His Ser Trp Glu Tyr Trp						
	275			280		285
Gly Ala Gln Leu Asn Ala Met Lys Gly Asp Leu Gln Ser Ser Leu Gly						
	290			295		300
Ala Gly Lys Leu Ala Met Thr Glu Gln Gln Trp Asn Phe Ala Gly Ile						
305		310		315		320
Glu Ala Ala Ala Ser Ala Ile Gln Gly Asn Val Thr Ser Ile His Ser						
	325			330		335
Leu Leu Asp Glu Gly Lys Gln Ser Leu Thr Lys Leu Ala Ala Ala Trp						
	340			345		350
Gly Gly Ser Gly Ser Glu Ala Tyr Gln Gly Val Gln Gln Lys Trp Asp						
	355			360		365
Ala Thr Ala Thr Glu Leu Asn Asn Ala Leu Gln Asn Leu Ala Arg Thr						
	370			375		380
Ile Ser Glu Ala Gly Gln Ala Met Ala Ser Thr Glu Gly Asn Val Thr						
385		390		395		400
Gly Met Phe Ala						

<210> 173
 <211> 403
 <212> PRT
 <213> Mycobacterium tuberculosis

<400> 173

Met Ala Thr Val Asn Arg Ser Arg His His His His His His His														
1				5				10					15	
Ile Glu Gly Arg Ser Met Thr Glu Gln Gln Trp Asn Phe Ala Gly Ile														
	20						25					30		
Glu Ala Ala Ala Ser Ala Ile Gln Gly Asn Val Thr Ser Ile His Ser														
	35					40				45				
Leu Leu Asp Glu Gly Lys Gln Ser Leu Thr Lys Leu Ala Ala Ala Trp														
	50				55				60					
Gly Gly Ser Gly Ser Glu Ala Tyr Gln Gly Val Gln Gln Lys Trp Asp														
65				70				75					80	

Ala	Thr	Ala	Thr	Glu	Leu	Asn	Asn	Ala	Leu	Gln	Asn	Leu	Ala	Arg	Thr	85	90	95
Ile	Ser	Glu	Ala	Gly	Gln	Ala	Met	Ala	Ser	Thr	Glu	Gly	Asn	Val	Thr	100	105	110
Gly	Met	Phe	Ala	Lys	Leu	Phe	Ser	Arg	Pro	Gly	Leu	Pro	Val	Glu	Tyr	115	120	125
Leu	Gln	Val	Pro	Ser	Pro	Ser	Met	Gly	Arg	Asp	Ile	Lys	Val	Gln	Phe	130	135	140
Gln	Ser	Gly	Gly	Asn	Asn	Ser	Pro	Ala	Val	Tyr	Leu	Leu	Asp	Gly	Leu	145	150	155
Arg	Ala	Gln	Asp	Asp	Tyr	Asn	Gly	Trp	Asp	Ile	Asn	Thr	Pro	Ala	Phe	165	170	175
Glu	Trp	Tyr	Tyr	Gln	Ser	Gly	Leu	Ser	Ile	Val	Met	Pro	Val	Gly	Gly	180	185	190
Gln	Ser	Ser	Phe	Tyr	Ser	Asp	Trp	Tyr	Ser	Pro	Ala	Cys	Gly	Lys	Ala	195	200	205
Gly	Cys	Gln	Thr	Tyr	Lys	Trp	Glu	Thr	Phe	Leu	Thr	Ser	Glu	Leu	Pro	210	215	220
Gln	Trp	Leu	Ser	Ala	Asn	Arg	Ala	Val	Lys	Pro	Thr	Gly	Ser	Ala	Ala	225	230	235
Ile	Gly	Leu	Ser	Met	Ala	Gly	Ser	Ser	Ala	Met	Ile	Leu	Ala	Ala	Tyr	245	250	255
His	Pro	Gln	Gln	Phe	Ile	Tyr	Ala	Gly	Ser	Leu	Ser	Ala	Leu	Leu	Asp	260	265	270
Pro	Ser	Gln	Gly	Met	Gly	Pro	Ser	Leu	Ile	Gly	Leu	Ala	Met	Gly	Asp	275	280	285
Ala	Gly	Gly	Tyr	Lys	Ala	Ala	Asp	Met	Trp	Gly	Pro	Ser	Ser	Asp	Pro	290	295	300
Ala	Trp	Glu	Arg	Asn	Asp	Pro	Thr	Gln	Gln	Ile	Pro	Lys	Leu	Val	Ala	305	310	315
Asn	Asn	Thr	Arg	Leu	Trp	Val	Tyr	Cys	Gly	Asn	Gly	Thr	Pro	Asn	Glu	325	330	335
Leu	Gly	Gly	Ala	Asn	Ile	Pro	Ala	Glu	Phe	Leu	Glu	Asn	Phe	Val	Arg	340	345	350
Ser	Ser	Asn	Leu	Lys	Phe	Gln	Asp	Ala	Tyr	Asn	Ala	Ala	Gly	Gly	His	355	360	365
Asn	Ala	Val	Phe	Asn	Phe	Pro	Pro	Asn	Gly	Thr	His	Ser	Trp	Glu	Tyr	370	375	380

Trp Gly Ala Gln Leu Asn Ala Met Lys Gly Asp Leu Gln Ser Ser Leu
 385 390 395 400

Gly Ala Gly

<210> 174
 <211> 291
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 174
 atgtcgcaga ttatgtacaa ctatccggcg atgatggctc atgccgggga catggccggt 60
 tatgctggca cgctgcagag cttggggggcc gatatcgcca gtgagcaggc cgtgctgtcc 120
 agtgcttggc aggggtgatac cgggatcacg tatcagggtt ggcagacca gtggaaccag 180
 gccctagagg atctggtgcg ggcctatcag tcatgtctg gcacccatga gtccaacacc 240
 atggcgatgt tggctcgaga tggggccgaa gccgccaagt ggggaggcta g 291

<210> 175
 <211> 96
 <212> PRT
 <213> Mycobacterium tuberculosis

<400> 175
 Met Ser Gln Ile Met Tyr Asn Tyr Pro Ala Met Met Ala His Ala Gly
 1 5 10 15
 Asp Met Ala Gly Tyr Ala Gly Thr Leu Gln Ser Leu Gly Ala Asp Ile
 20 25 30
 Ala Ser Glu Gln Ala Val Leu Ser Ser Ala Trp Gln Gly Asp Thr Gly
 35 40 45
 Ile Thr Tyr Gln Gly Trp Gln Thr Gln Trp Asn Gln Ala Leu Glu Asp
 50 55 60
 Leu Val Arg Ala Tyr Gln Ser Met Ser Gly Thr His Glu Ser Asn Thr
 65 70 75 80
 Met Ala Met Leu Ala Arg Asp Gly Ala Glu Ala Ala Lys Trp Gly Gly
 85 90 95

<210> 176
 <211> 363
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 176
 gtgtcgcaga gtatgtacag ctacccggcg atgacggcca atgtcggaga catggccggt. 60
 tatacgggca cgacgcagag cttggggggcc gatatcgcca gtgagcgac cgcgccgtcg 120

cgtgcttgcc aaggtgatct cgggatgagt catcaggact ggcaggccca gtggaatcag 180
 gccatggagg ctctcgcgcg ggcctaccgt cggtgccggc gagcactacg ccagatcggg 240
 gtgctgga aa ggccggtagg cgattcgtca gactgcggaa cgattagggg ggggtcgttc 300
 cggggtcggg ggctggaccc gcgccatgcg ggtccagcca cggccgccga cgccggagac 360
 taa 363

<210> 177
 <211> 120
 <212> PRT
 <213> Mycobacterium tuberculosis

<400> 177

Met	Ser	Gln	Ser	Met	Tyr	Ser	Tyr	Pro	Ala	Met	Thr	Ala	Asn	Val	Gly
1				5					10					15	
Asp	Met	Ala	Gly	Tyr	Thr	Gly	Thr	Thr	Gln	Ser	Leu	Gly	Ala	Asp	Ile
			20					25					30		
Ala	Ser	Glu	Arg	Thr	Ala	Pro	Ser	Arg	Ala	Cys	Gln	Gly	Asp	Leu	Gly
		35					40					45			
Met	Ser	His	Gln	Asp	Trp	Gln	Ala	Gln	Trp	Asn	Gln	Ala	Met	Glu	Ala
	50					55					60				
Leu	Ala	Arg	Ala	Tyr	Arg	Arg	Cys	Arg	Arg	Ala	Leu	Arg	Gln	Ile	Gly
65					70					75					80
Val	Leu	Glu	Arg	Pro	Val	Gly	Asp	Ser	Ser	Asp	Cys	Gly	Thr	Ile	Arg
				85					90					95	
Val	Gly	Ser	Phe	Arg	Gly	Arg	Trp	Leu	Asp	Pro	Arg	His	Ala	Gly	Pro
		100						105					110		
Ala	Thr	Ala	Ala	Asp	Ala	Gly	Asp								
		115					120								

<210> 178
 <211> 297
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 178

atggcctcgc gttttatgac ggatccgcac gcgatgcggg acatggcggg ccgttttgag 60
 gtgcacgccc agacggtgga ggacgaggct cgccggatgt gggcgctcgc gcaaaacatc 120
 tcgggcgcgg gctggagtgg catggccgag gcgacctcgc tagacaccat gaccagatg 180
 aatcaggcgt ttcgcaacat cgtgaacatg ctgcacgggg tgcgtgacgg gctggttcgc 240

gacgccaaca actacgaaca gcaagagcag gcctcccagc agatcctcag cagctga 297

<210> 179
<211> 98
<212> PRT
<213> Mycobacterium tuberculosis

<400> 179

Met Ala Ser Arg Phe Met Thr Asp Pro His Ala Met Arg Asp Met Ala
1 5 10 15

Gly Arg Phe Glu Val His Ala Gln Thr Val Glu Asp Glu Ala Arg Arg
20 25 30

Met Trp Ala Ser Ala Gln Asn Ile Ser Gly Ala Gly Trp Ser Gly Met
35 40 45

Ala Glu Ala Thr Ser Leu Asp Thr Met Thr Gln Met Asn Gln Ala Phe
50 55 60

Arg Asn Ile Val Asn Met Leu His Gly Val Arg Asp Gly Leu Val Arg
65 70 75 80

Asp Ala Asn Asn Tyr Glu Gln Gln Glu Gln Ala Ser Gln Gln Ile Leu
85 90 95

Ser Ser

<210> 180
<211> 297
<212> DNA
<213> Mycobacterium tuberculosis

<400> 180

atggcctcac gttttatgac ggatccgcac gcgatgcggg acatggcggg ccgttttgag 60

gtgcacgccc agacggtgga ggacgaggct cgccggatgt gggcgtccgc gcaaaacatt 120

tccggtgcgg gctggagtgg catggccgag gcgacctcgc tagacaccat ggcccagatg 180

aatcaggcgt ttcgcaacat cgtgaacatg ctgcacgggg tgcgtgacgg gctggttcgc 240

gacgccaaca actacgagca gcaagagcag gcctcccagc agatcctcag cagctaa 297

<210> 181
<211> 98
<212> PRT
<213> Mycobacterium tuberculosis

<400> 181

Met Ala Ser Arg Phe Met Thr Asp Pro His Ala Met Arg Asp Met Ala
1 5 10 15

Gly Arg Phe Glu Val His Ala Gln Thr Val Glu Asp Glu Ala Arg Arg
 20 25 30
 Met Trp Ala Ser Ala Gln Asn Ile Ser Gly Ala Gly Trp Ser Gly Met
 35 40 45
 Ala Glu Ala Thr Ser Leu Asp Thr Met Ala Gln Met Asn Gln Ala Phe
 50 55 60
 Arg Asn Ile Val Asn Met Leu His Gly Val Arg Asp Gly Leu Val Arg
 65 70 75 80
 Asp Ala Asn Asn Tyr Glu Gln Gln Glu Gln Ala Ser Gln Gln Ile Leu
 85 90 95
 Ser Ser

<210> 182
 <211> 297
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 182
 atggcctcac gttttatgac ggatccgcat gcgatgcggg acatggcggg ccgttttgag 60
 gtgcacgccc agacggtgga ggacgaggct cgccggatgt gggcgtccgc gcaaaacatt 120
 tccggtgcgg gctggagtgg catggccgag gcgacctcgc tagacaccat gacctagatg 180
 aatcaggcgt ttcgcaacat cgtgaacatg ctgcacgggg tgcgtgacgg gctggttcgc 240
 gacgccaaca actacgaaca gcaagagcag gcctcccagc agatcctgag cagctag 297

<210> 183
 <211> 98
 <212> PRT
 <213> Mycobacterium tuberculosis

<400> 183
 Met Ala Ser Arg Phe Met Thr Asp Pro His Ala Met Arg Asp Met Ala
 1 5 10 15
 Gly Arg Phe Glu Val His Ala Gln Thr Val Glu Asp Glu Ala Arg Arg
 20 25 30
 Met Trp Ala Ser Ala Gln Asn Ile Ser Gly Ala Gly Trp Ser Gly Met
 35 40 45
 Ala Glu Ala Thr Ser Leu Asp Thr Met Thr Gln Met Asn Gln Ala Phe
 50 55 60
 Arg Asn Ile Val Asn Met Leu His Gly Val Arg Asp Gly Leu Val Arg
 65 70 75 80

Asp Ala Asn Asn Tyr Glu Gln Gln Glu Gln Ala Ser Gln Gln Ile Leu
85 90 95

Ser Ser

<210> 184
<211> 297
<212> DNA
<213> Mycobacterium tuberculosis

<400> 184
atgacctcgc gttttatgac ggatccgcac gcgatgcggg acatggcggg ccgttttgag 60
gtgcacgccc agacggtgga ggacgaggct cgccggatgt gggcgtccgc gcaaaacatt 120
tccggcgccg gctggagtgg catggccgag gcgacctcgc tagacaccat gaccagatg 180
aatcaggcgt ttcgcaacat cgtgaacatg ctgcacgggg tgcgtgacgg gctggttcgc 240
gacgccaaca actacgaaca gcaagagcag gcctcccagc agatcctcag cagctga 297

<210> 185
<211> 98
<212> PRT
<213> Mycobacterium tuberculosis

<400> 185

Met Thr Ser Arg Phe Met Thr Asp Pro His Ala Met Arg Asp Met Ala
1 5 10 15
Gly Arg Phe Glu Val His Ala Gln Thr Val Glu Asp Glu Ala Arg Arg
20 25 30
Met Trp Ala Ser Ala Gln Asn Ile Ser Gly Ala Gly Trp Ser Gly Met
35 40 45
Ala Glu Ala Thr Ser Leu Asp Thr Met Thr Gln Met Asn Gln Ala Phe
50 55 60
Arg Asn Ile Val Asn Met Leu His Gly Val Arg Asp Gly Leu Val Arg
65 70 75 80
Asp Ala Asn Asn Tyr Glu Gln Gln Glu Gln Ala Ser Gln Gln Ile Leu
85 90 95

Ser Ser

<210> 186
<211> 20
<212> DNA
<213> Mycobacterium tuberculosis

<400> 186
ggaatgaaaa ggggtttgtg 20

<210> 187
<211> 20
<212> DNA
<213> Mycobacterium tuberculosis

<400> 187
gaccacgccc gcgccgtgtg 20

<210> 188
<211> 27
<212> DNA
<213> Mycobacterium tuberculosis

<400> 188
gcaacacccg ggatgtcgca gattatg 27

<210> 189
<211> 30
<212> DNA
<213> Mycobacterium tuberculosis

<400> 189
ctaagcttgg atccctagcc gcccacttg 30

<210> 190
<211> 22
<212> DNA
<213> Mycobacterium tuberculosis

<400> 190
gaatatttga aagggttcg tg 22

<210> 191
<211> 30
<212> DNA
<213> Mycobacterium tuberculosis

<400> 191
ctactaagct tggatcctta gtctccggcg 30

<210> 192
<211> 27
<212> DNA
<213> Mycobacterium tuberculosis

<400> 192
gcaacacccg ggggtgtcgca gagtatg 27

<210> 193
 <211> 30
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 193
 ctactaagct tggatcctta gtctccggcg 30

<210> 194
 <211> 381
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> CDS
 <222> (91)..(378)

<400> 194
 ggccgccggt acctatgtgg ccgccgatgc tgcggacgcg tcgacctata ccgggttctg 60

atcgaaccct gctgaccgag aggacttgtg atg tcg caa atc atg tac aac tac 114
 Met Ser Gln Ile Met Tyr Asn Tyr
 1 5

ccc gcg atg ttg ggt cac gcc ggg gat atg gcc gga tat gcc ggc acg 162
 Pro Ala Met Leu Gly His Ala Gly Asp Met Ala Gly Tyr Ala Gly Thr
 10 15 20

ctg cag agc ttg ggt gcc gag atc gcc gtg gag cag gcc gcg ttg cag 210
 Leu Gln Ser Leu Gly Ala Glu Ile Ala Val Glu Gln Ala Ala Leu Gln
 25 30 35 40

agt gcg tgg cag ggc gat acc ggg atc acg tat cag gcg tgg cag gca 258
 Ser Ala Trp Gln Gly Asp Thr Gly Ile Thr Tyr Gln Ala Trp Gln Ala
 45 50 55

cag tgg aac cag gcc atg gaa gat ttg gtg cgg gcc tat cat gcg atg 306
 Gln Trp Asn Gln Ala Met Glu Asp Leu Val Arg Ala Tyr His Ala Met
 60 65 70

tcc agc acc cat gaa gcc aac acc atg gcg atg atg gcc cgc gac acc 354
 Ser Ser Thr His Glu Ala Asn Thr Met Ala Met Met Ala Arg Asp Thr
 75 80 85

gcc gaa gcc gcc aaa tgg ggc ggc tag 381
 Ala Glu Ala Ala Lys Trp Gly Gly
 90 95

<210> 195
 <211> 96
 <212> PRT
 <213> Mycobacterium tuberculosis

<400> 195

Met Ser Gln Ile Met Tyr Asn Tyr Pro Ala Met Leu Gly His Ala Gly
1 5 10 15

Asp Met Ala Gly Tyr Ala Gly Thr Leu Gln Ser Leu Gly Ala Glu Ile
20 25 30

Ala Val Glu Gln Ala Ala Leu Gln Ser Ala Trp Gln Gly Asp Thr Gly
35 40 45

Ile Thr Tyr Gln Ala Trp Gln Ala Gln Trp Asn Gln Ala Met Glu Asp
50 55 60

Leu Val Arg Ala Tyr His Ala Met Ser Ser Thr His Glu Ala Asn Thr
65 70 75 80

Met Ala Met Met Ala Arg Asp Thr Ala Glu Ala Ala Lys Trp Gly Gly
85 90 95

<210> 196
<211> 363
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> CDS
<222> (1)..(360)

<400> 196
gtg tcg cag agt atg tac agc tac ccg gcg atg acg gcc aat gtc gga 48
Val Ser Gln Ser Met Tyr Ser Tyr Pro Ala Met Thr Ala Asn Val Gly
1 5 10 15

gac atg gcc ggt tat acg ggc acg acg cag agc ttg ggg gcc gat atc 96
Asp Met Ala Gly Tyr Thr Gly Thr Thr Gln Ser Leu Gly Ala Asp Ile
20 25 30

gcc agt gag cgc acc gcg ccg tcg cgt gct tgc caa ggt gat ctc ggg 144
Ala Ser Glu Arg Thr Ala Pro Ser Arg Ala Cys Gln Gly Asp Leu Gly
35 40 45

atg agt cat cag gac tgg cag gcc cag tgg aat cag gcc atg gag gct 192
Met Ser His Gln Asp Trp Gln Ala Gln Trp Asn Gln Ala Met Glu Ala
50 55 60

ctc gcg cgg gcc tac cgt cgg tgc cgg cga gca cta cgc cag atc ggg 240
Leu Ala Arg Ala Tyr Arg Arg Cys Arg Arg Ala Leu Arg Gln Ile Gly
65 70 75 80

gtg ctg gaa agg ccg gta ggc gat tcg tca gac tgc gga acg att agg 288
Val Leu Glu Arg Pro Val Gly Asp Ser Ser Asp Cys Gly Thr Ile Arg

<222> (1) .. (288)

<400> 198

atg	tcg	cag	att	atg	tac	aac	tat	ccg	gcg	atg	atg	gct	cat	gcc	ggg	48
Met	Ser	Gln	Ile	Met	Tyr	Asn	Tyr	Pro	Ala	Met	Met	Ala	His	Ala	Gly	
1				5					10					15		

gac	atg	gcc	ggt	tat	gcg	ggc	acg	ctg	cag	agc	ttg	ggg	gcc	gat	atc	96
Asp	Met	Ala	Gly	Tyr	Ala	Gly	Thr	Leu	Gln	Ser	Leu	Gly	Ala	Asp	Ile	
			20					25					30			

gcc	agt	gag	cag	gcc	gtg	ctg	tcc	agt	gct	tgg	cag	ggg	gat	acc	ggg	144
Ala	Ser	Glu	Gln	Ala	Val	Leu	Ser	Ser	Ala	Trp	Gln	Gly	Asp	Thr	Gly	
		35					40					45				

atc	acg	tat	cag	ggc	tgg	cag	acc	cag	tgg	aac	cag	gcc	cta	gag	gat	192
Ile	Thr	Tyr	Gln	Gly	Trp	Gln	Thr	Gln	Trp	Asn	Gln	Ala	Leu	Glu	Asp	
	50					55					60					

ctg	gtg	cgg	gcc	tat	cag	tcg	atg	tct	ggc	acc	cat	gag	tcc	aac	acc	240
Leu	Val	Arg	Ala	Tyr	Gln	Ser	Met	Ser	Gly	Thr	His	Glu	Ser	Asn	Thr	
65					70				75					80		

atg	gcg	atg	ttg	gct	cga	gat	ggg	gcc	gaa	gcc	gcc	aag	tgg	ggc	ggc	288
Met	Ala	Met	Leu	Ala	Arg	Asp	Gly	Ala	Glu	Ala	Ala	Lys	Trp	Gly	Gly	
				85				90						95		

tag																291
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<210> 199

<211> 96

<212> PRT

<213> Mycobacterium tuberculosis

<400> 199

Met	Ser	Gln	Ile	Met	Tyr	Asn	Tyr	Pro	Ala	Met	Met	Ala	His	Ala	Gly
1				5					10					15	

Asp	Met	Ala	Gly	Tyr	Ala	Gly	Thr	Leu	Gln	Ser	Leu	Gly	Ala	Asp	Ile
			20					25					30		

Ala	Ser	Glu	Gln	Ala	Val	Leu	Ser	Ser	Ala	Trp	Gln	Gly	Asp	Thr	Gly
		35					40					45			

Ile	Thr	Tyr	Gln	Gly	Trp	Gln	Thr	Gln	Trp	Asn	Gln	Ala	Leu	Glu	Asp
	50					55					60				

Leu	Val	Arg	Ala	Tyr	Gln	Ser	Met	Ser	Gly	Thr	His	Glu	Ser	Asn	Thr
65					70				75					80	

Met Ala Met Leu Ala Arg Asp Gly Ala Glu Ala Ala Lys Trp Gly Gly
85 90 95

<210> 200
<211> 60
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> CDS
<222> (1)..(60)

<400> 200
atg tcg cag att atg tac aac tat ccg gcg atg atg gct cat gcc ggg 48
Met Ser Gln Ile Met Tyr Asn Tyr Pro Ala Met Met Ala His Ala Gly
1 5 10 15

gac atg gcc ggt 60
Asp Met Ala Gly
20

<210> 201
<211> 20
<212> PRT
<213> Mycobacterium tuberculosis

<400> 201

Met Ser Gln Ile Met Tyr Asn Tyr Pro Ala Met Met Ala His Ala Gly
1 5 10 15

Asp Met Ala Gly
20

<210> 202
<211> 60
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> CDS
<222> (1)..(60)

<400> 202
atg atg gct cat gcc ggg gac atg gcc ggt tat gcg ggc acg ctg cag 48
Met Met Ala His Ala Gly Asp Met Ala Gly Tyr Ala Gly Thr Leu Gln
1 5 10 15

agc ttg ggg gcc 60
Ser Leu Gly Ala
20

<210> 203
<211> 20
<212> PRT
<213> Mycobacterium tuberculosis

<400> 203

Met Met Ala His Ala Gly Asp Met Ala Gly Tyr Ala Gly Thr Leu Gln
1 5 10 15

Ser Leu Gly Ala
20

<210> 204
<211> 60
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> CDS
<222> (1)..(60)

<400> 204
tat gcg ggc acg ctg cag agc ttg ggg gcc gat atc gcc agt gag cag 48
Tyr Ala Gly Thr Leu Gln Ser Leu Gly Ala Asp Ile Ala Ser Glu Gln
1 5 10 15

gcc gtg ctg tcc 60
Ala Val Leu Ser
20

<210> 205
<211> 20
<212> PRT
<213> Mycobacterium tuberculosis

<400> 205

Tyr Ala Gly Thr Leu Gln Ser Leu Gly Ala Asp Ile Ala Ser Glu Gln
1 5 10 15

Ala Val Leu Ser
20

<210> 206
<211> 60
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> CDS
<222> (1)..(60)

<400> 206
 gat atc gcc agt gag cag gcc gtg ctg tcc agt gct tgg cag ggt gat 48
 Asp Ile Ala Ser Glu Gln Ala Val Leu Ser Ser Ala Trp Gln Gly Asp
 1 5 10 15

acc ggg atc acg 60
 Thr Gly Ile Thr
 20

<210> 207
 <211> 20
 <212> PRT
 <213> Mycobacterium tuberculosis

<400> -207
 Asp Ile Ala Ser Glu Gln Ala Val Leu Ser Ser Ala Trp Gln Gly Asp
 1 5 10 15

Thr Gly Ile Thr
 20

<210> 208
 <211> 60
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> CDS
 <222> (1)..(60)

<400> 208
 agt gct tgg cag ggt gat acc ggg atc acg tat cag ggc tgg cag acc 48
 Ser Ala Trp Gln Gly Asp Thr Gly Ile Thr Tyr Gln Gly Trp Gln Thr
 1 5 10 15

cag tgg aac cag 60
 Gln Trp Asn Gln
 20

<210> 209
 <211> 20
 <212> PRT
 <213> Mycobacterium tuberculosis

<400> 209
 Ser Ala Trp Gln Gly Asp Thr Gly Ile Thr Tyr Gln Gly Trp Gln Thr
 1 5 10 15

Gln Trp Asn Gln

<210> 210
 <211> 60
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> CDS
 <222> (1)..(60)

<400> 210
 tat cag ggc tgg cag acc cag tgg aac cag gcc cta gag gat ctg gtg 48
 Tyr Gln Gly Trp Gln Thr Gln Trp Asn Gln Ala Leu Glu Asp Leu Val
 1 5 10 15

cgg gcc tat cag 60
 Arg Ala Tyr Gln
 20

<210> 211
 <211> 20
 <212> PRT
 <213> Mycobacterium tuberculosis

<400> 211

Tyr Gln Gly Trp Gln Thr Gln Trp Asn Gln Ala Leu Glu Asp Leu Val
 1 5 10 15

Arg Ala Tyr Gln
 20

<210> 212
 <211> 60
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> CDS
 <222> (1)..(60)

<400> 212
 gcc cta gag gat ctg gtg cgg gcc tat cag tcg atg tct ggc acc cat 48
 Ala Leu Glu Asp Leu Val Arg Ala Tyr Gln Ser Met Ser Gly Thr His
 1 5 10 15

gag tcc aac acc 60
 Glu Ser Asn Thr
 20

<210> 213

<211> 20
<212> PRT
<213> Mycobacterium tuberculosis

<400> 213

Ala Leu Glu Asp Leu Val Arg Ala Tyr Gln Ser Met Ser Gly Thr His
1 5 10 15

Glu Ser Asn Thr
20

<210> 214
<211> 60
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> CDS
<222> (1)..(60)

<400> 214
tcg atg tct ggc acc cat gag tcc aac acc atg gcg atg ttg gct cga 48
Ser Met Ser Gly Thr His Glu Ser Asn Thr Met Ala Met Leu Ala Arg
1 5 10 15

gat ggg gcc gaa 60
Asp Gly Ala Glu
20

<210> 215
<211> 20
<212> PRT
<213> Mycobacterium tuberculosis

<400> 215

Ser Met Ser Gly Thr His Glu Ser Asn Thr Met Ala Met Leu Ala Arg
1 5 10 15

Asp Gly Ala Glu
20

<210> 216
<211> 48
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> CDS
<222> (1)..(48)

<400> 216
 atg gcg atg ttg gct cga gat ggg gcc gaa gcc gcc aag tgg ggc ggc 48
 Met Ala Met Leu Ala Arg Asp Gly Ala Glu Ala Ala Lys Trp Gly Gly
 1 5 10 15

<210> 217
 <211> 16
 <212> PRT
 <213> Mycobacterium tuberculosis

<400> 217
 Met Ala Met Leu Ala Arg Asp Gly Ala Glu Ala Ala Lys Trp Gly Gly
 1 5 10 15

<210> 218
 <211> 54
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> CDS
 <222> (1)..(54)

<400> 218
 atg tcg caa atc atg tac aac tac ccc gcg atg ttg ggt cac gcc ggc 48
 Met Ser Gln Ile Met Tyr Asn Tyr Pro Ala Met Leu Gly His Ala Gly
 1 5 10 15

gat atg 54
 Asp Met

<210> 219
 <211> 18
 <212> PRT
 <213> Mycobacterium tuberculosis

<400> 219
 Met Ser Gln Ile Met Tyr Asn Tyr Pro Ala Met Leu Gly His Ala Gly
 1 5 10 15

Asp Met

<210> 220
 <211> 54
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>

<221> CDS
<222> (1)..(54)

<400> 220
atg ttg ggt cac gcc ggg gat atg gcc gga tat gcc ggc acg ctg cag 48
Met Leu Gly His Ala Gly Asp Met Ala Gly Tyr Ala Gly Thr Leu Gln
1 5 10 15

agc ttg 54
Ser Leu

<210> 221
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

<400> 221

Met Leu Gly His Ala Gly Asp Met Ala Gly Tyr Ala Gly Thr Leu Gln
1 5 10 15

Ser Leu

<210> 222
<211> 54
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> CDS
<222> (1)..(54)

<400> 222
tat gcc ggc acg ctg cag agc ttg ggt gcc gag atc gcc gtg gag cag 48
Tyr Ala Gly Thr Leu Gln Ser Leu Gly Ala Glu Ile Ala Val Glu Gln
1 5 10 15

gcc gcg 54
Ala Ala

<210> 223
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

<400> 223

Tyr Ala Gly Thr Leu Gln Ser Leu Gly Ala Glu Ile Ala Val Glu Gln
1 5 10 15

Ala Ala

<210> 224
<211> 54
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> CDS
<222> (1)..(54)

<400> 224
gag atc gcc gtg gag cag gcc gcg ttg cag agt gcg tgg cag ggc gat 48
Glu Ile Ala Val Glu Gln Ala Ala Leu Gln Ser Ala Trp Gln Gly Asp
1 5 10 15

acc ggg 54
Thr Gly

<210> 225
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

<400> 225

Glu Ile Ala Val Glu Gln Ala Ala Leu Gln Ser Ala Trp Gln Gly Asp
1 5 10 15

Thr Gly

<210> 226
<211> 54
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> CDS
<222> (1)..(54)

<400> 226
agt gcg tgg cag ggc gat acc ggg atc acg tat cag gcg tgg cag gca 48
Ser Ala Trp Gln Gly Asp Thr Gly Ile Thr Tyr Gln Ala Trp Gln Ala
1 5 10 15

cag tgg 54
Gln Trp

<210> 227
 <211> 18
 <212> PRT
 <213> Mycobacterium tuberculosis

<400> 227

Ser	Ala	Trp	Gln	Gly	Asp	Thr	Gly	Ile	Thr	Tyr	Gln	Ala	Trp	Gln	Ala
1			5					10						15	

Gln Trp

<210> 228
 <211> 51
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> CDS
 <222> (1)..(51)

tat	cag	gcg	tgg	cag	gca	cag	tgg	aac	cag	gcc	atg	gaa	gat	ttg	gtg	48
Tyr	Gln	Ala	Trp	Gln	Ala	Gln	Trp	Asn	Gln	Ala	Met	Glu	Asp	Leu	Val	
1			5					10						15		

cgg	51
Arg	

<210> 229
 <211> 17
 <212> PRT
 <213> Mycobacterium tuberculosis

<400> 229

Tyr	Gln	Ala	Trp	Gln	Ala	Gln	Trp	Asn	Gln	Ala	Met	Glu	Asp	Leu	Val
1			5					10						15	

Arg

<210> 230
 <211> 54
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> CDS

<222> (1)..(54)

<400> 230

gcc atg gaa gat ttg gtg cgg gcc tat cat gcg atg tcc agc acc cat	48
Ala Met Glu Asp Leu Val Arg Ala Tyr His Ala Met Ser Ser Thr His	
1 5 10 15	

gaa gcc	54
Glu Ala	

<210> 231

<211> 18

<212> PRT

<213> Mycobacterium tuberculosis

<400> 231

Ala Met Glu Asp Leu Val Arg Ala Tyr His Ala Met Ser Ser Thr His	
1 5 10 15	

Glu Ala

<210> 232

<211> 54

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> CDS

<222> (1)..(54)

<400> 232

gcg atg tcc agc acc cat gaa gcc aac acc atg gcg atg atg gcc cgc	48
Ala Met Ser Ser Thr His Glu Ala Asn Thr Met Ala Met Met Ala Arg	
1 5 10 15	

gac acg	54
Asp Thr	

<210> 233

<211> 18

<212> PRT

<213> Mycobacterium tuberculosis

<400> 233

Ala Met Ser Ser Thr His Glu Ala Asn Thr Met Ala Met Met Ala Arg	
1 5 10 15	

Asp Thr

<210> 234
<211> 48
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> CDS
<222> (1)..(48)

<400> 234
atg gcg atg atg gcc cgc gac acc gcc gaa gcc gcc aaa tgg ggc ggc 48
Met Ala Met Met Ala Arg Asp Thr Ala Glu Ala Ala Lys Trp Gly Gly
1 5 10 15

<210> 235
<211> 16
<212> PRT
<213> Mycobacterium tuberculosis

<400> 235
Met Ala Met Met Ala Arg Asp Thr Ala Glu Ala Ala Lys Trp Gly Gly
1 5 10 15

<210> 236
<211> 60
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> CDS
<222> (1)..(60)

<400> 236
gtg tcg cag agt atg tac agc tac ccg gcg atg acg gcc aat gtc gga 48
Val Ser Gln Ser Met Tyr Ser Tyr Pro Ala Met Thr Ala Asn Val Gly
1 5 10 15

gac atg gcc ggt 60
Asp Met Ala Gly
20

<210> 237
<211> 20
<212> PRT
<213> Mycobacterium tuberculosis

<400> 237
Val Ser Gln Ser Met Tyr Ser Tyr Pro Ala Met Thr Ala Asn Val Gly

1 5 10 15

Asp Met Ala Gly
20

<210> 238
<211> 60
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> CDS
<222> (1)..(60)

<400> 238
atg acg gcc aat gtc gga gac atg gcc ggt tat acg ggc acg acg cag 48
Met Thr Ala Asn Val Gly Asp Met Ala Gly Tyr Thr Gly Thr Thr Gln
1 5 10 15

agc ttg ggg gcc 60
Ser Leu Gly Ala
20

<210> 239
<211> 20
<212> PRT
<213> Mycobacterium tuberculosis

<400> 239

Met Thr Ala Asn Val Gly Asp Met Ala Gly Tyr Thr Gly Thr Thr Gln
1 5 10 15

Ser Leu Gly Ala
20

<210> 240
<211> 60
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> CDS
<222> (1)..(60)

<400> 240
tat acg ggc acg acg cag agc ttg ggg gcc gat atc gcc agt gag cgc 48
Tyr Thr Gly Thr Thr Gln Ser Leu Gly Ala Asp Ile Ala Ser Glu Arg
1 5 10 15

acc gcg ccg tcg 60
Thr Ala Pro Ser

20

<210> 241
<211> 20
<212> PRT
<213> Mycobacterium tuberculosis

<400> 241

Tyr Thr Gly Thr Thr Gln Ser Leu Gly Ala Asp Ile Ala Ser Glu Arg
1 5 10 15

Thr Ala Pro Ser
20

<210> 242
<211> 60
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> CDS
<222> (1)..(60)

<400> 242
gat atc gcc agt gag cgc acc gcg ccg tcg cgt gct tgc caa ggt gat 48
Asp Ile Ala Ser Glu Arg Thr Ala Pro Ser Arg Ala Cys Gln Gly Asp
1 5 10 15

ctc ggg atg agt 60
Leu Gly Met Ser
20

<210> 243
<211> 20
<212> PRT
<213> Mycobacterium tuberculosis

<400> 243

Asp Ile Ala Ser Glu Arg Thr Ala Pro Ser Arg Ala Cys Gln Gly Asp
1 5 10 15

Leu Gly Met Ser
20

<210> 244
<211> 60
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> CDS
<222> (1)..(60)

<400> 244
cgt gct tgc caa ggt gat ctc ggg atg agt cat cag gac tgg cag gcc 48
Arg Ala Cys Gln Gly Asp Leu Gly Met Ser His Gln Asp Trp Gln Ala
1 5 10 15

cag tgg aat cag 60
Gln Trp Asn Gln
20

<210> 245
<211> 20
<212> PRT
<213> Mycobacterium tuberculosis

<400> 245

Arg Ala Cys Gln Gly Asp Leu Gly Met Ser His Gln Asp Trp Gln Ala
1 5 10 15

Gln Trp Asn Gln
20

<210> 246
<211> 60
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> CDS
<222> (1)..(60)

<400> 246
cat cag gac tgg cag gcc cag tgg aat cag gcc atg gag gct ctc gcg 48
His Gln Asp Trp Gln Ala Gln Trp Asn Gln Ala Met Glu Ala Leu Ala
1 5 10 15

cgg gcc tac cgt 60
Arg Ala Tyr Arg
20

<210> 247
<211> 20
<212> PRT
<213> Mycobacterium tuberculosis

<400> 247

His Gln Asp Trp Gln Ala Gln Trp Asn Gln Ala Met Glu Ala Leu Ala
1 5 10 15

Arg Ala Tyr Arg
20

<210> 248
<211> 60
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> CDS
<222> (1)..(60)

<400> 248
gcc atg gag gct ctc gcg cgg gcc tac cgt cgg tgc cgg cga gca cta 48
Ala Met Glu Ala Leu Ala Arg Ala Tyr Arg Arg Cys Arg Arg Ala Leu
1 5 10 15

cgc cag atc ggg 60
Arg Gln Ile Gly
20

<210> 249
<211> 20
<212> PRT
<213> Mycobacterium tuberculosis

<400> 249

Ala Met Glu Ala Leu Ala Arg Ala Tyr Arg Arg Cys Arg Arg Ala Leu
1 5 10 15

Arg Gln Ile Gly
20

<210> 250
<211> 60
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> CDS
<222> (1)..(60)

<400> 250
cgg tgc cgg cga gca cta cgc cag atc ggg gtg ctg gaa agg ccg gta 48
Arg Cys Arg Arg Ala Leu Arg Gln Ile Gly Val Leu Glu Arg Pro Val
1 5 10 15

ggc gat tcg tca 60
Gly Asp Ser Ser
20

<210> 251
<211> 20
<212> PRT
<213> Mycobacterium tuberculosis

<400> 251

Arg Cys Arg Arg Ala Leu Arg Gln Ile Gly Val Leu Glu Arg Pro Val
1 5 10 15

Gly Asp Ser Ser
20

<210> 252
<211> 60
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> CDS
<222> (1)..(60)

<400> 252
gtg ctg gaa agg ccg gta ggc gat tcg tca gac tgc gga acg att agg 48
Val Leu Glu Arg Pro Val Gly Asp Ser Ser Asp Cys Gly Thr Ile Arg
1 5 10 15

gtg ggg tcg ttc 60
Val Gly Ser Phe
20

<210> 253
<211> 20
<212> PRT
<213> Mycobacterium tuberculosis

<400> 253

Val Leu Glu Arg Pro Val Gly Asp Ser Ser Asp Cys Gly Thr Ile Arg
1 5 10 15

Val Gly Ser Phe
20

<210> 254
<211> 60
<212> DNA
<213> Mycobacterium tuberculosis

<400> 254

gactgcggaa cgattagggg ggggtcggtc cggggtcggt ggctggaccc gcgccatgcg 60

<210> 255
<211> 20
<212> PRT
<213> Mycobacterium tuberculosis

<400> 255

Asp Cys Gly Thr Ile Arg Val Gly Ser Phe Arg Gly Arg Trp Leu Asp
1 5 10 15

Pro Arg His Ala
20

<210> 256
<211> 60
<212> DNA
<213> Mycobacterium tuberculosis

<400> 256
cggggtcggt ggctggaccc gcgccatgcg ggtccagcca cggccgccga cgccggagac 60

<210> 257
<211> 20
<212> PRT
<213> Mycobacterium tuberculosis

<400> 257

Arg Gly Arg Trp Leu Asp Pro Arg His Ala Gly Pro Ala Thr Ala Ala
1 5 10 15

Asp Ala Gly Asp
20